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RELATIONSHIP OF MILITARY ENVIRONMENTS
TO STRESS AND PERFORMANCE

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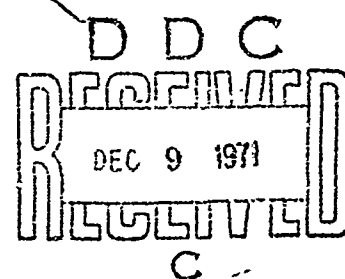
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The purpose of this two-year study was to develop and test a method for assessing the social climate of military training companies and determine the relationship between enlistment men's perceptions of their company environments, feelings of stress, and performance.

A total of 32 training companies at Fort Ord, California was given the Military Company Environment Index (MCEI) over a two-year period. This index assessed subjects' perception of their company environment on 13 scales given such labels as Spontaneity, Support, Practicality, Affiliation, Order, etc. In addition, subjects took the Multiple Affect Adjective Check List which measures subjects' feelings of Anxiety, Depression, Hostility and Dysphoria. Performance was measured in terms of number of sick calls, AWOL, Article 15, PCPT scores, Firing scores, and Graded Test scores.

Results showed that a final factor analyzed version of the MCEI could be developed whose scales were significantly related to feelings of stress and also to military performance. The most important

aspect of the environment associated with stress and performance was peer support.

Results also showed that BCT units' environments change in highly unique ways.

The major military implication is that the MCEI can assist command to assess company environments and develop procedure to increase company effectiveness.

RELATIONSHIP OF MILITARY ENVIRONMENTS
TO STRESS AND PERFORMANCE¹

Harris (aka Stanley R.) Clemes, Ph.D.
Mental Research Institute

1.0 PURPOSE OF REPORT.

This report covers the period from August, 1968 through September, 1970 for Contract # DA 49-193-MD 2637.

The purpose of this research was to develop an instrument to assess military environments and to determine the relationship of military environments to enlisted men's feelings of stress, such as anxiety, depression, etc. and their performance.

2.0 SPECIFIC AIMS AND HYPOTHESES.

2.1 Develop a questionnaire which will assess military unit members' perception of their social environment. It was hypothesized that items could be written and scales formed which would significantly differentiate between companies within a particular training type, such as Basic Combat Training (BCT) companies vs. Advanced Infantry Training (AIT) companies, as well as differentiate between training company types.

2.2 Determine the extent to which men's perception of their social environment is related to their indications of felt stress, such as anxiety, depression and hostility. It was hypothesized that scales of the environmental index would be significantly related to the enlisted men's indications of their felt stress.

2.3 Study the relationship between military environments and both global as well as specific performance criteria. Such specific criteria as AWOL rate, Article 15 rate, sick call, firing scores, physical training scores and graded test scores will be examined, as well as global ratings obtained from brigade commanders. It was hypothesized that both questionnaire items as well as scale scores would be significantly related and be predictive of outcome measures.

2.4 Determine to what extent and in what ways the environment of Basic Combat Training units change over an 8-week cycle. It was hypothesized that the changes in the military environment over an 8-week cycle would be significant, and that the changes for any one company would be significantly different from the changes in another company--that is, each military company would change in an unique way.

3.0 BACKGROUND AND PREVIOUS RESEARCH.

3.1 Importance of Project for Mental Hygiene Consultation Service:

One of the primary functions of the mental hygiene consultation service is to prevent maladaptive behavior. Such consultation can most effectively be done by focusing on company and brigade policies and ways of changing the social, physical, and policy environment of the companies. But before such consultation can be effective, greater knowledge of company environments and the relationship to stress must be ascertained. During the first year, an instrument for measuring

company environment has been developed. During the second year, the emphasis will be on understanding the relationship between company environments, men's feelings of stress and various behavior indications of stress, such as frequency of going on sick call and AWOL.

This investigation is done in close cooperation with LTC William Datel's study of affect changes in basic training units and thus coordinates and elaborates the research aims of the mental hygiene consultation service at Fort Ord.

3.2 Previous Investigations and R&D Command Contract:

Previous studies conducted under the Surgeon General's R&D contract, DA 49-193-MD-2637, have in general focused on the social environments in units, particularly the type of communication occurring in those social relationships. Some of the results from the first year phase of the contract titled, "The Relationships of Conscious Orientation to Behavior in a Military Trainee Population," showed that company environments might be important. At the end of basic training, the trainees in the experimental sample located in thirteen companies, completed an army attitude questionnaire. It was found that when type of enlistment was controlled, the companies differed in how favorably the men regarded the company, thus suggesting differences in company environment. Another result showed that trainee attitude with their cadre was not just the result of the men's own values, but an interaction between the trainee's values and those of the platoon sergeant (Clemes, 1966c). These results suggested

that a closer examination of the social context of behavior would be important. Moreover, another study during the same year found that BCT training cadre, during the time of training suspension, experienced different types of stress as a function of two different types of programs instituted by the brigade to keep the cadre occupied (Clemes, 1966a).

It was decided to study more extensively the interpersonal contacts of the company since several studies (e.g., Blackman, Mendell, and Goldstein, 1965; French, 1951) suggested that peer relationship in military companies could both predict as well as cause deviance. Two aspects of interpersonal relationships were focused upon the extent of self-disclosure communication with "buddies," and the strength and number of cliques in the platoon. Three studies were conducted during this phase of the contract titled, "Group Cohesiveness and Deviance." One of the studies (Clemes, 1966b) showed that men who had gone AWOL were less open in disclosing themselves to their army buddies than were controls. Moreover, the AWOL's values differed from those presumed to be characteristic of the army. The results from the second study (Clemes and Terrill, 1968), conducted during this time, further supported the importance of self-disclosure communication. "Abnormal" marital couples, that is, those in psychiatric treatment, when interacting together in a game-like situation, gave less feedback to each other about their feelings than did "normal" couples. Moreover, the amount of self-disclosure was positively related to the couple's cooperative behavior in the game. The third

study (Clemes, 1970) analyzed the relationship between clique structure in platoons and the deviant behavior. Evidence was found that being a member of the clique, that is, being in a supportive friendship relationship, is related to reduced use of medical aid. Since the cliques were based on those men who the subject could tell his problems to, it would seem that the ability of a man to disclose himself to friends reduces the stress which would manifest itself in physical symptoms.

The following year, under the phase of the contract title, "Correlates to Effective Group Communication," a laboratory measure of accurate communication was developed, and results showed that mortar teams, which have accurate communication in the laboratory, also evidence high field performance even when intellectual factors are controlled.

Thus, self-disclosure, particularly to "buddies," and accurate group communication are related to behavior which has military consequences--AWOL and mortar team performance. It could be that Datel's rather consistent finding (Datel, et al., 1966) that the stress level in BCT companies increases until around the third or fourth week and then decreases is due to initial lack of support of peer relationships which do not become well formed until the third or fourth week. However, we need to know more about what other environmental factors are operating during this third and fourth week that are different from the first week in order to really understand why there should be these dramatic increases and decreases in affect level among the men.

The question arose of how MHCS units could consult with companies

to enhance supportive and accurate peer communications and thus reduce deviance and increase field performance. It became apparent, however, that nothing was known about how important communication factors were relative to the general company environment. Therefore, to understand military companies' environments, an indepth study of the relationship between military environment and occurrence of stress and deviant behavior must be made.

3.3 Work of Others:

Although psychologists (for example, Murray, 1938) have emphasized that behavior varies as a function of both the situation and the individual's predispositions, most investigators have neglected the environment. Personality measurements have proliferated while environmental assessments have been ignored--at least until recently. For example, Fiedler (1964) indicated that effective leadership is not so much a "trait" as it is a function of the group "climate," including such aspects as leader-member relationships, group task, and position power.

The emphasis in recent studies has been on how environmental context and personality predispositions combine and interact. Rausch, et al. (1959, 1960, 1965), in studying hyperaggressive behavior of children, found that the interaction between persons and settings was more predictive of behavior variance than either of the two components considered separately. From another area, Endler, Hunt and Rosenstein (1962), and Endler and Hunt (1967) found that persons, settings and person-setting interactions each contributes significantly

to behavior variance in both anxiety and hostility.

Moos and Houts (1968) found that physically similar psychiatric wards with widely discrepant social atmospheres tended to facilitate different patient adaptive responses. Other studies have conclusively shown that the same person behaves differently as the setting changes (Barker, 1965; Gump, Schoggen and Redel, 1957; Gump and Friesen, 1965; Sosking and John, 1963; Zinner, 1963).

The most common method for measuring environments has been to gather "perceptual" data generated by questionnaire responses as to whether or not a given characteristic was true for a particular organization (e.g., Moos and Houts, 1968; Pace and Stern, 1957; Sells, 1963).

Pace and Stern (1958) adopted Henry Murray's concept (Murray, 1958) that individuals have characteristic needs which the environment has potentials for satisfying or frustrating (environmental "press"); they developed a questionnaire, the College Characteristic Index (Stern, 1963), which requires students to mark statements about their own college life as being true or not true. The subjects report what they have observed about their environment, for example, whether or not it is true that "class discussions are typically vigorous and intense." A particular college environment can then be characterized by those items on which a proportion of students agree. Such scales have been used to describe differences between college environments.

4.0 DEVELOPMENT AND PRELIMINARY ASSESSMENT OF THE MILITARY COMPANY ENVIRONMENT INDEX (MCEI).

4.1 INTRODUCTION.

The discussion of the research will take place in three main

sections: 1) development of preliminary testing of the initial version of the Military Company Environment Index; 2) testing of the hypotheses regarding expectations on the preliminary model of the questionnaire; 3) final refinement of the scale and assessment. In each section, the procedure, as well as the results, will be defined.

4.2 PROCEDURE USED IN THE DEVELOPMENT OF THE PRELIMINARY VERSION OF THE MCEI AND ASSESSMENT OF THE INSTRUMENT.

4.2.1 Development of Questionnaire Items:

Existing atmosphere questionnaires were examined to determine their appropriateness for military environments. It was felt that the Ward Atmosphere Scale developed by Moos and Houts (1968) might be appropriate when re-worded to fit a military context. The Ward Atmosphere Scale is designed to measure environmental differences between psychiatric wards, and consists of 130 items to which the respondent has to answer "true" or "false" in regard to his own ward. The 130 items are divided into 13 scales of 10 items each, half of each scale works in a positive and half in a negative direction. The 13th scale is a "halo" scale designed to assess the extent to which the subject is attempting to present a very, very positive or a very, very negative picture of his environment, to the extent that he may be distorting his presentation. The questionnaire was developed by Moos and Houts after their perusal of the literature and interviewing of staff and patients. The items were designed so

that 90% significantly discriminated among the wards for patients, and that the overall item split was as close to 50-50 as possible. The half sub-scale items were selected so that the items would not discriminate significantly between wards, and they would be accepted by fewer than 10% of the patients and staff. Moreover, the scale, in order to conform to the general format, would have 10 items, five worded in a positively and five worded in an extremely negatively manner.

4.2.1.1 A research team, after examining the Ward Atmosphere Scale, interviewed cadre, officers, and enlisted men in 6 training units at Fort Ord, California, a military police unit and a transportation company. The men were asked their perceptions of their company. From these interviews, it was decided that the items of the Ward Atmosphere Scale, when rewritten to fit the military context, would cover the major points made by these men.

4.2.1.2 The 130 items were rewritten to conform to military environments, and 6 more items relating to existing scales were added. In addition, 10 new items were constructed to form another scale called the "stripping scale," which measured the extent to which the soldiers feel their individuality is repressed, and they cannot freely express their opinions and ideas.

4.2.1.3 The final MCEI consisted of 146 items which were divided into 13 scales plus 2 response set scales. The response set scales

measured the extent to which a person had either a very positive halo--that is, he sees everything in an exaggerated positive manner--or a negative halo, which means he sees everything very negatively. The items for each scale and the final version of the MCEI are contained in Appendix 1.

It should be noted that the scales are worded in such a fashion that they reflect certain personal needs or desires of individuals. Many of the descriptions are taken from Murray's needs press theory (Murray, 1938) which states that the way a person behaves is a function of his own personal needs, and the environments "press" which either allows for and facilitates, or prevents, the satisfaction of those needs. The scales are briefly described below.

Spontaneity: The extent to which men can freely express their ideas and opinions.

Support: The extent to which both officers and peers support and help enlisted men.

Practicality: The extent to which there is an emphasis on preparing the soldier for a practical skill and future, and the extent to which the work is related to relevant goals. .

Affiliation: The degree to which enlisted men get together to talk and share ideas, and their environmental support for social interaction.

Order: The extent to which there is regularity and order in both the company area and work schedule.

Insight: The extent to which there is an emphasis placed on individuals discussing personal feelings and problems, and how much they try to get insight into why they feel the way they do.

Involvement: The extent to which men put forth energy in their work and how much they are eager to engage in the activities of the unit.

Aggression: The extent to which several expressions of anger and hostility are shown, such as criticism, joking, arguments, etc.

Submission: The degree to which authority and environment pressure individuals to conform to rules and to show respect to superiors.

Autonomy: The extent to which individuals can express their own ideas and engage in activities without supervision; also, the extent to which men are encouraged to act and think for themselves.

Variety: The degree to which the environment is changing, novel and different from one time to the next.

Clarity: The extent to which rules, schedules, and duties are clearly explained to the men.

Stripping: The extent to which individual differences are ignored and people are subjected to ridicule and debasement.

Response Set: These items are so extreme that only those with either very positive or negative sets would either agree or disagree with them. For instance, "I never want to leave this company," is an extreme statement and a person who would say "true" to that might be suspected of having very positive halo, which would influence all his responses.

4.2.2 Testing of Items:

4.2.2.1 Samples. In cooperation with the Mental Hygiene Consultation Service and the Command at Fort Ord, California, 16 training companies were selected for preliminary trial of the instrument; 8 of the companies were designated by brigade commanders as high performance companies and 8 were selected as low performing companies. There were thus a total of 8 companies selected from Basic Combat Training units (BCT), 4 from Advanced Infantry Training units (AIT) and 4 from Combat Support Training units (CST). The brigade commanders' evaluations took into consideration graded test score averages, physical training scores, firing scores, AWOL rate and general conduct of the companies.

A random sample of enlisted men was selected from each of the 16 companies, and an attempt was made to get at least 20 men from each of the platoons within the company. This was to insure that the platoons, which sometimes differ from each other, were equally represented within that company.

The final sample consisted of 1,156 enlisted men and 60 cadre officers. Since there were so few cadre and officers relative to the number of enlisted men who took the test, their results have not been analyzed. The number of enlisted men who took the MCEI in each company varied from a low of 18 to a high of 100. Table 1 indicates the n of each of the companies tested.

 Insert Table 1 Here

4.2.2.2 Measurement of Stress Affect. The men's feelings of stress were measured through the Multiple Affect Adjective Check List (MAACL). The questionnaire (see Appendix 1) requires the men to check 132 adjectives, such as "active", "afraid", "angry", etc., in terms of how they felt during the past week. This instrument, developed by Zuckerman (1960), has been used in the military context by Dattel (1966a, 1966b, 1966c) to assess changes in stress during the 8-week Basic Combat Training period. The items are divided into 4 scales which are labelled "Anxiety", "Depression", "Hostility", and "Dysphoria". Because of administrative error, only 11 companies successfully completed the MAACL.

4.2.2.3 Social Desirability Effects. In order to determine the extent to which the MCEI items were being effected by social desirability tendencies, the Crowne-Marlowe Social Desirability Scale (Crowne and Marlowe; 1964) was administered to five randomly selected companies. The scale measures the extent to which individuals have a tendency to present themselves on questionnaires in an extremely socially desirable way, to such an extent that it may distort the validity of any particular test. It should be pointed out that although previous research by Moos and Houts (1968) has shown the items to be not significantly related to such tendencies, it was felt that, because of the re-wording and the different context, social desirability effects on the items should be assessed.

4.2.2.4 Test Administration. The administration of the tests was accomplished by research assistants who tested all of the men in the company's mess halls. The men were told that their responses to the items would not be seen by the military, nor would it affect their military status in any way. It was stressed to the men that this study was an attempt to find out more about the environment of military companies, and how men felt during their training.

4.3 ANALYSIS AND RESULTS.

4.3.1 Form A of the MCEI and scale scoring key is contained in Appendix 2.

4.3.2 Company Differentiation. The first question was to determine the extent to which the items significantly differentiated across all 16 companies, since it was desirable that an index be developed which would highlight differences between individual companies. It was also expected that the items and scales would significantly differentiate between types of training, that is, between BCT, AIT, and CST units.

A one-way analysis of variance of the percentage in each company answering a particular item "true" was determined across all 16 companies for each of the 146 items. The results indicate that between 60 to 100% of the items in each scale significantly differentiated across all of the companies.

It was assumed, therefore, that the scales too would significantly differentiate across companies. In fact, an inspection of Appendix 3, which charts profiles of each of the 15 companies, indicates that the companies indeed are quite individualistic (one company with only 18 subjects was excluded). The profiles in Appendix 3 are constructed so that the means of all companies (an overall mean) is centered at 0, and each company's mean scale score is plotted from this overall mean, with a standard deviation of 10.

4.3.3 MCEI Differentiation Between Training Types. Table 2 indicates the profile of the mean BCT, AIT, and CST companies. The training type means are made relative to all company means set at zero and standard deviation of 10.

 Insert Table 2 Here

An inspection of Table 2, particularly of the F figures on the right-hand side, indicate that CST companies were highest on experiencing Support, Practicality and Involvement, while BCT companies were highest on Spontaneity and also on Stripping. Thus, it seems that, at least in the Combat Support Training units, which train cooks, linemen, clerks etc., the men were experiencing more support as well as practical application of what they were doing, and they were also more involved than the other two types of training units.

4.3.4 Social Desirability Correlations. None of the MCEI items were significantly related to subjects' social desirability tendencies. The intercorrelation matrix was composed of a subject's tendency on a particular MCEI item to answer "true" or "false", and the subject's Crowne-Marlowe Social Desirability Score.

4.3.5 MCEI Differentiation between High- and Low-Performing Companies. A one-way analysis of variance was performed to determine the extent to which each of the MCEI scales differentiated between the 8 high- and the 8 low-performing companies. None of the "F's" were significant, indicating that none of the scales significantly differentiated between these two groups of companies.

4.3.6 MCEI Item Differentiation between High- and Low-Performing Companies. Each of the 146 MCEI items were examined in terms of the extent to which it significantly differentiated between high- and low-performing

companies. A non-parametric measure was devised comparable to a Critical Ratio to test the significance of the differentiation. The company with only 18 subjects was included for this analysis. The results are contained in Appendix 4, which shows the wording of the items significantly differentiating companies, percentage in each company answering "true" for that item, and the absolute difference between the mean percentage answering "true" for high- and low-performing companies. The items in the appendix are worded to reflect what the high-performing companies had to say about their environments; an asterisk after the statistic itself indicates that on the MCEI questionnaire the item was worded in the opposite direction. The reason for the reversal in the wording is to clarify how the high-performing company men view their environment. The high-low column indicates the degree to which the average percent of the high-performing and the average percent of the low-performing companies differ from each other, as stated in absolute values. To the right are the columns which indicate the percentage of those responding for each item across all 16 companies. It should be pointed out that many of the differences between high- and low-performing companies were very small, even though statistically significant. Moreover, there were many reversals, so that the results should be viewed with caution. Moreover, just because high- and low- companies do reflect a statistically significant difference in environments does not necessarily indicate a causal relationship between the environment and the performance.

An inspection of these items shows that in high-performing companies, the enlisted men, more so than in low-performing companies, were more careful what they said to the officers, and there is a definite separation between officers and enlisted men. The men did not feel much support from their cadre and officers; however, the men tended to support each other. It was as though the separation between officers and men forced the men closer together. Moreover, the high-performing companies tended to be strict companies. The enlisted man knew his place and, although he had somewhat hostile reactions to his officers, he felt the officers knew what he wanted. It should be noted also that the high-performing companies tended to have more ambiguous communication which, by keeping the men somewhat uncertain as to procedures, motivated them to pay very close attention to what the officers said.

There is obvious need to cross-validate these items against other, more objective performance criteria. This was done during the second year of this project and reported in 6.3.5.

4.3.7 Relationship between Stress and MCEI Scale Scores. Table 3 indicates the Pearson Product-Moment Correlations between each of the 4 Multiple Affect Adjective Check List scales (Anxiety, Depression, Hostility and Dysphoria) and each of the MCEI Scale Scores. Two intercorrelation matrices are presented separating the low-performing from the high-performing companies. This was done to determine if correlations were effected by performance outcomes. The two matrices in Table 3 indicate those correlations which are significant at the

.05 level or beyond.

 Insert Table 3 Here

It appears from an examination of the table that the following MCEI scales, Support, Affiliation, Involvement and Stripping, are most highly and most consistently related to the MAACL scales. These four MCEI scales hold up on both low-rated and high rated companies. In addition, the high-rate companies show significant correlations between the MCEI scales of Practicality, Clarity, Aggression and Autonomy and the MAACL Dysphoria scale.

In general, aspects of the environment that seem to be influencing the men's level of stress are those which, first of all, affect their peer relationships, as reflected in Affiliation and Support scales. Another way of looking at all of this is, if Command would want to reduce hostility and depression in a military company, that they should encourage supportive peer and cadre relationships, promote closer peer contacts and reduce stripping of a person's individuality. Those actions should also increase a person's involvement. The findings support evidence from other studies cited earlier as to the importance of peer support in reducing stress.

4.3.8 MAACL Differentiation of Types of Training Companies. A one-way analysis of variance was performed to determine the extent to which MAACL scales differentiated between training company types. Tables 4 and 5 present these results.

Insert Tables 4 and 5 Here

An examination of Table 4 indicates that Anxiety differentiates among companies at the .07 level, Depression at the .05 level, Hostility at the .01 level, and Dysphoria at the .05 level. Table 5 shows a number of significant differences between BCT, AIT and CST in MAACL scores. Anxiety differentiates between these units at the .01 level, with BCT showing the most anxiety, followed by AIT and CST. There was very little difference between these latter two units. Depression did not significantly differentiate between the three training companies. Hostility significantly differentiates at the .05 level between three types of training units, with BCT having the mean of 14.97, AIT having the mean of 14.30, and CST having the mean of 12.78. As can be seen, there is a considerable drop in hostility in the CST units.

There is no significant difference between the high- and the low-performance companies on the MAACL scales.

4.3.9 Summary.

1) The first year results showed that a questionnaire measuring military environment could be developed whose items significantly differentiated between military companies and also between types of training units. Moreover, these items were not related to subjects' social desirability tendencies.

2) The MCEI scales were significantly related to stress, but not to global performance as judged by Brigade Commanders.

3) The MCEI items which significantly differentiated high- and low-performing companies, suggested that high-performing companies were seen by the men as highly peer supportive, but sharply maintaining the separation between cadre and men. Also, these companies tended to be strict, and the communication tended to be somewhat ambiguous. These results must be cross-validated against more objective criteria.

5.0 THE RELATIONSHIP OF EXPECTATION DISCREPANCIES TO PERFORMANCE AND STRESS.

5.1 HYPOTHESIS.

It was hypothesized that the discrepancy between the men's expectations and actual company environment would be significantly related to certain indices of the men's performance and MAACL scales of Anxiety, Hostility, Depression and Dysphoria.

5.2 PROCEDURE.

5.2.1 A random selection of 350 men were tested during their first 24 hour stay at the Fort Ord Reception Station. The Reception Station is the entry point of men into Fort Ord prior to assignment to the Basic Training units. The men were tested on the Expectation MCEI, which consisted of regular MCEI items worded in the future tense; the men were asked to indicate how they expected their future Basic Combat Training units to be in terms of these items. The 350 men were then assigned to the 5 Basic Combat Training companies which were filling

during that week.

5.2.2 Three of these 5 BCT companies were selected for longitudinal studies for another part of this research. All of the men in these 3 companies were tested during the 2nd, 4th, 6th and 8th weeks of basic training on the MCEI and MAACL.

5.2.3 The number of men in each company at each testing are indicated in Table 6. It should be noted that the number of subjects varies slightly at each testing because of men being absent for various reasons, such as sick call, transfers, etc.

 Insert Table 6 Here

5.3 RESULTS.

5.3.1 Type of Analysis. For each man who was tested on the Expectation MCEI in the Reception Station and who was also in one of the 3 companies selected, a discrepancy score was computed between the man's Expectancy MCEI scale score and his BCT company average on that particular scale for Week 4. This discrepancy score was directional. That is, in every case, the man's expectation scale score was subtracted from the Mean of the company's scale score. Negative discrepancy scores for an individual would mean that this man expected more of that characteristic in his environment during the 4th week than what was indicated by the company average, which for analysis purposes was taken as "the actual" environment. Discrepancy scores were correlated with a man's performance in terms of number of sick calls made, his firing score, his

physical training score and finally his 8th week Graded Test score. Discrepancy scores were also correlated to the man's MAACL Affect scores taken during the 4th week. The same kind of analysis, as a form of replication, was repeated for the 8th week testing. That is, the man's discrepancy scores for the 8th week was computed by taking his Expectation MCEI scale score, subtracting it from the company average on a scale for the 8th week, and correlating it with a man's performance scores and a man's MAACL taken during the 8th week.

5.3.2 Results. Table 7 indicates the significant correlations between the expectation discrepancy scores for each of the 13 MCEI scales with performance indices and MAACL scales. It should be noted that the 8th week correlations are essentially similar to the 4th week correlations shown below. For that reason, the 8th week correlations are not shown, since they do not change the results in any essential way.

 Insert Table 7 Here

An examination of Table 7 indicates the following: There are relatively few significant correlations between expectation discrepancy scores with the performance variables. Significant correlations indicate that firing scores are associated with high expectation of Order, Aggression, Submission, Autonomy, Variety and Stripping.

Such significant correlations do not seem to follow any consistent, logical or theoretical pattern. Therefore, we can say that, although there are some significant correlations between expectation discrepancy and performance, none were noteworthy.

5.3.3 An examination of the correlations between expectation, discrepancy and MAACL scores indicates that expecting less than company averages in Spontaneity, Support, Practicality, Involvement, Autonomy, Variety and Clarity is associated with feelings of Anxiety, Hostility, Depression and Dysphoria. In other words, when a man during Reception Station indicates he expects less positive aspects of his environment than actually did occur in the 4th week, then during the 4th week he tends to have high stress. Expectations of more Aggression, Submission and Stripping than what actually occurred during the 4th week are associated with high stress. Therefore, expectations of a more negative environment than what actually occurred, tend also to be associated with high stress feelings. In summary of the above two points, high stress during the 4th and 8th weeks is associated with a soldier during reception station expecting his future BCT environment would be more negative and less positive than what actually did occur.

6.0 REFINEMENT OF MCEI AND ANALYSIS OF ENVIRONMENTAL PERCEPTIONS TO PERFORMANCE AND STRESS.

6.1 HYPOTHESES.

6.1.1 It was hypothesized that the perception of company environments

would change significantly over an 8-week basic training cycle, and that each of the companies would show unique changes.

6.1.2 It was hypothesized that affect changes over an 8-week cycle would show significant changes.

6.1.3 It was hypothesized that the perception of the environment would be significantly related to stress affects as well as performance.

6.1.4 It was hypothesized that 2 companies, one under special experimental program of contingent reinforcement (TIMEC) would show differences in environment from BCT companies not under this special experimental program.

6.2 PROCEDURE.

6.2.1 It was decided to focus on BCT companies at Fort Ord, California. Three BCT companies were selected as described in 5.2.1, and were tested during the 2nd, 4th, 6th and 8th weeks of the 8-week training cycle on the MAACL and the MCEI. Such testing would permit a longitudinal analysis of the change in men's perception of their environment. These 3 companies were called "longitudinal companies." (See Table 6 for number of subjects tested.)

Furthermore, 8 companies whose 4th week of training were no more than 2 weeks apart were tested on the MAACL and MCEI during the 4th week; company performance in terms of number of sick calls, AWOL rates, number of Article 15s, firing scores, PCPT (physical training) scores

and Graded Test scores were compiled. These companies were called "cross-sectional" companies.

At the request of the Fort Ord Command, 2 experimental companies undergoing an environment of contingent reinforcement and called TIMEC were tested during their 4th and 8th weeks on the MAACL and MCEI, and were contrasted to 3 BCT control companies not undergoing such experimental conditions. These 3 BCT companies were called "modified longitudinal" companies. See Table 8 for number of men tested in each of these companies.

 Insert Table 8 Here

6.3 ANALYSIS OF RESULTS.

6.3.1 Analysis of Longitudinal Companies. It was predicted that men's perceptions of their company environment would change significantly over the 8 weeks. Moreover, the 3 companies would experience unique changes. A preliminary 3-way analysis of variance was performed on the MCEI scale scores for each of the 3 companies. The 3-way analysis was by company, by scale and by time of testing. Uneven cell N was compensated for by the Method of Unweighted Means (Winer, 1962). Table 9 indicates the results.

 Insert Table 9 Here

An inspection of the table indicates that not only the company differences and scale and time differences were significant, but also the 2-way and 3-way interactions were significant, thus suggesting that each company does undergo an unique change over the 8-week

cycle.

6.3.2 Factor Analysis of MCEI. A factor analysis was performed on a random sample of 509 subjects taken from the 8 Cross-Sectional companies, the 2 TIMEC companies and the 3 Modified Longitudinal companies, all tested in the 4th week. Forty subjects were taken from each of these 13 companies. The reduction in n to 509 was because certain subjects were dropped who showed missing data. The BIOMED factor analysis program X72 was used. The analysis uses a multi-squared correlational coefficient of every item with all other items in the diagonals, with orthogonal rotation. The factor analysis yielded 7 scales with 12 items each. The scales were labelled as follows:

1. Involvement. The 12 items in this scale have to do with the extent to which enlisted men put energy into their work, are interested in the company, perform details without prodding, etc.
2. Peer Cohesion. The items describe the extent enlisted men feel they can openly share their problems and feelings with each other, how much time they spend together in off-duty hours, how quickly they get to know each other, etc.
3. Officer Support. The 12 items in this scale pertain to the extent to which NCOs and officers know what the enlisted men want, tend to act upon the enlisted men's suggestions, encourage as well as help the enlisted men, etc.
4. Personal Status. The items describe the extent to which the enlisted men feel their individuality is being recognized, the extent

to which they are encouraged to learn new ways and to act and think for themselves, etc.

5. Order. The items refer to company characteristics such as company rules are strictly followed, the activities are carefully planned, how neat the company is, and the regularity of work hours, etc.

6. Clarity. This scale measures the extent to which enlisted men are certain about the rules in their company, are knowledgeable about what the officers expect of them, the extent to which rules and policies are fixed and clear, etc.

7. Officer Control. This scale measures the extent to which officers tend to discourage criticism, and check and supervise the men, how much the men tend to feel threatened, and have to hide their feelings from NCOs and officers.

The list of the items under each of these scales is contained in Appendix 5.

The results from now on will be described in terms of these 7-factor scale scores.

6.3.2.1 The longitudinal profiles of the 3 basic training companies, in terms of the 7-factor scale scores, are contained in Appendix 6. These profiles are drawn to correspond to a Mean of 50 and a Standard Deviation of 10; in other words, Standard Scores. The standardization was accomplished by re-scoring the original 16 companies during the first year in terms of these 7 scales as well as the 16 second year

companies and then computing the average in Standard Score on all 32 companies. An examination of Appendix 6 indicates graphically that the change in any of the 3 longitudinal companies is highly unique. This result suggests that a company is like an unique organism or person which undergoes its own growth and own change, probably according to factors such as the type of men in the company, the type of officers, the particular type of policies being instituted at the military base, and so on.

6.3.2.2 Chart 1 graphically portrays the affect changes for the longitudinal companies 1, 2, and 3. Chart 1 indicates that all three companies peak at the 4th week, much as Datel (Datel, 1960, 1961, 1962) found. However, Company 1 has significantly less dysphoria than the other 2 companies and also less affect variability over the test times.

 Insert Chart 1 Here

6.3.3 The Relationship of Environmental Perception to Affect and Performance.

6.3.3.1 For each of the 8 cross-sectional companies, the total number of sick calls, the total number of AWOLs, and Article 15s were computed. Also obtained were the firing scores, the physical training scores (PCPT) and the 8th week Graded Test scores.

For analysis purposes, certain performance variables were combined. AWOL and Article 15 were combined, sick call was kept

separate, and all 3 test scores were added together to make one total test score. Each of the 8 companies then, in terms of these 3 performance criteria were ranked, and, in addition, a global performance measure ("Total Performance") was computed by taking the Mean Rank Order of each of the 8 companies on the 3 performance criteria. This Mean Rank Order then became a score, and the 8 companies were ranked in terms of this Mean Rank Order Score.

6.3.3.2 The rank order correlation was then computed for the 8 cross-sectional companies ranks on MAACL, MCEI factor scale scores and the performance criteria (see Table 10).

 Insert Table 10 Here

6.3.3.3 An examination of Table 10 indicates the following results:

1. High Anxiety is associated with perception of low Personal Status and high Officer Control.
2. High Depression is associated with the environment being seen as having low Peer Support and high Officer Control. It is to be noted that Depression, which is often associated with lack of affection in clinical theory, is in this case most strongly associated with low Peer Support, a scale measuring affectional behavior.
3. High Hostility is most strongly associated with low Officer Support as well as with low Involvement, low Clarity of communication and high Officer Control. This is another way of saying that men tend to feel angry and hostile when they don't feel that their officers

listen to them, pay attention to them or support them. They probably show this anger by low involvement.

4. Peer Cohesion is the only MCEI factor scale associated with performance. High Peer Cohesion is associated with high test scores and high Total Performance.

6.3.4 TIMEC vs. BCT Controls.

6.3.4.1 Chart 2 shows the profiles of the 2 TIMEC companies' and the 3 Modified Longitudinal companies' scales of the MCEI. An examination of the scales indicates the following (a significant difference is taken when there is a 1 standard deviation between scores):

1. TIMEC companies are significantly lower on Officer Support and Clarity than BCT controls.

2. On the other factor scales, the companies are very similar to each other, or else there are gross differences among the 5 companies which do not separate out in terms of TIMEC vs. Modified Longitudinal types.

The results should be interpreted with the kind of problems TIMEC ran into--namely, that the cadre frequently did not support the experimental changes which required careful monitoring of men's performance in terms of contingency reinforcements. Since this was a new procedure, the clarity of communication might have suffered.

6.3.5 Refinement of MCEI scales.

6.3.5.1 Special scales were constructed to predict sick call rate, as well as Total Performance. These special scales were constructed

by first determining the company rank on the percentage of "true" responses for each of the MCEI items contained in the factor scales, and then rank-ordering the companies on each item. Rank order correlations were then computed between the percentage of true responses on the item, the 4 performance criteria of Article 15s and AWOLs, sick leaves, test scores and Total Performance. Appendix 7 indicates the factor scale score items rank order correlation with each of the performance criteria. Items with high correlation with sick call criteria and low with Total Performance were formed into a "Sick Call" scale. Similarly, items with high correlation with Total Performance and low correlation with sick call were selected for a "Total Performance" scale.

Table 11 shows the final items entering into the two MCEI performance predicting scales. Table 11 also indicates whether the Total Performance item did or did not predict correctly overall performance in the analysis of the first year results; Table 11 also shows the Rank Order Correlation of Scale scores with performance criteria.

 Insert Table 11 Here

6.3.5.2 In terms of Sick Call, MCEI items were selected which were not overlapping with the Total Performance predicting scale. The Sick Call scale contains items which show high sick call rate is associated with officers maintaining very strict, close track of the

men and constant checking on their activities, in which the activities are boring but the men are kept busy, and there is a suppression of leadership and a lack of officer support. In other words, companies which tend to have high sick call rates tend to be suppressive, plus the activities tend to be boring and repetitious.

An examination of the kind of items entering into the prediction of high Total Performance indicates that high performance is associated with high peer cohesion, in which men are free to share feelings and problems among each other, but at the same time experience firmness from the officers, whom they feel know their needs. Moreover, the officers set an example of neatness, orderliness and respect for each other. It is important to note that all but two items were significantly related to overall company performance during the first year. Thus, this scale represents a cross-validation of these items.

7.0 IMPLICATIONS.

7.1 The results strongly support the hypothesis that men's perception of their social environment is significantly related to their feelings of stress as well as their performance.

7.2 A questionnaire has now been developed and factored into 7 scales which do relate significantly to men's affect and performance. There is a strong indication that MCEI Total Performance Scale which contained items relating to overall performance in the first

year can be used to predict total company performance.

7.3 Such a questionnaire is now at a stage of development where it can be given to companies, for example, by the Mental Hygiene Consultation Services, in order to assist company commanders in analyzing the environment of that company and formulating policy and procedures to change the environment so that the men increase their performance and feel less stress.

7.4 The results strongly support a trend noted in other research projects under this contract that high performance and morale in training occur when trainees:

1. are able to share feelings
2. can discuss problems openly with each other
3. feel support from officers whom they sense know the needs of the men
4. see officers set examples of neatness, orderliness and respect
5. know the limits of their own authority.

7.5 The results lend support and also increased insight as to how peer nominations in military companies are good predictors of performance (Pleg, 1965). Peers who are effective interpersonal relators and thus are often nominated are also effective in leadership.

7.6 What is now needed is more research and investigation of methods to increase these qualities in the company environments, particularly the one variable which was characteristic of Peer Support. This was most critical in determining men's stress, as well as performance.

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Footnote

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Table 1

Number of Subjects in BCT, AIT and CST Companies

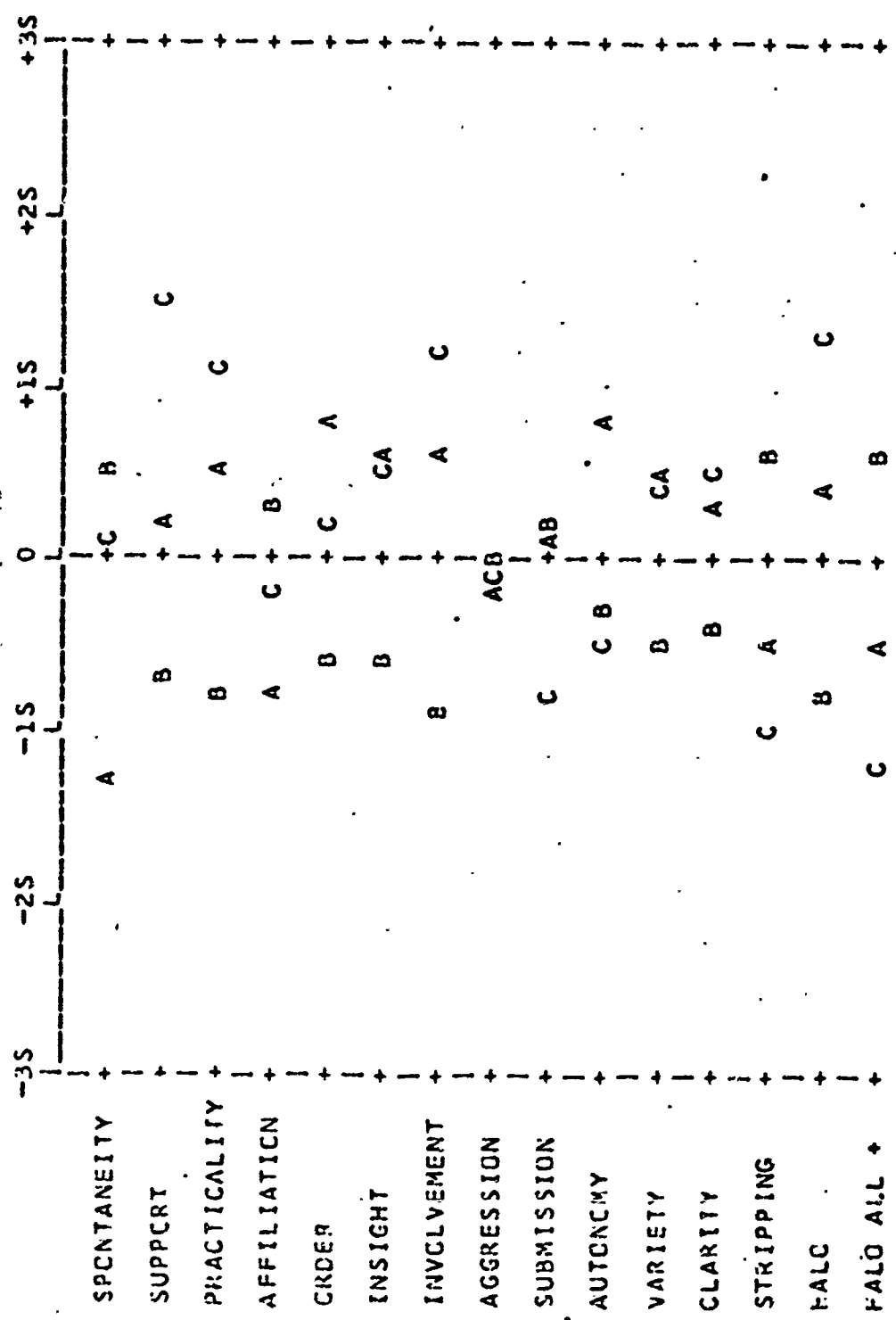
Performance	BCT				AIT		CST	
high	71	95	80	93	58	100	66	73
low	75	64	73	63	96	69	18	84

Table 2

Average BCT, AIT and CST Company MCEI Profiles,
and One-Way Analysis of Variance

F-STATISTIC 2,12 D.F.

$P < .05 = 3.89$



8.1928
18.3879
10.3997
1.7909
3.0897
3.6917
24.6340
0.0631
1.0632
2.0198
1.7234
1.1715
5.0755
12.9947
7.5480

Table 3

MCEI Scale Correlations with MAACL Scales
for High Rated and Low Rated Companies whose r's are in Brackets

(Only significant r's shown; $p < .05$, $r = .25$; N, Hi = 446; N, Lo = 297)

MAACL

MCEI	Anxiety	Depression	Hostility	Dysphoria
1. Spontaneity				
2. Support		-.34 (-.32)	-.30 (-.30)	-.33 (-.32)
3. Practicality	-.25	-.35	-.30	-.34
4. Affiliation		-.27 (-.30)	-.25	-.28 (-.30)
5. Order				
6. Insight				
7. Involvement		-.29 (-.31)	-.27 (-.32)	-.28 (-.33)
8. Aggression			.25	
9. Submission				
10. Autonomy				-.25
11. Variety				
12. Clarity	-.28	-.33	-.27	-.32
13. Stripping	.34	.41 (.41)	.33 (.42)	.40 (.42)

Table 4

One-Way Analysis of Variance of
MAACL Means Across 11 Companies

		<u>BCT</u>			<u>AIT</u>				<u>CST</u>			
		Lo	Hi	Hi	Hi	Hi	Lo	Lo	Hi	Hi	Lo	Lo
ANXIETY	Mean	11.26	11.22	10.56	9.91	10.09	10.27	10.44	9.36	10.15	10.30	10.75
	Standard Dev.	3.58	3.83	4.08	3.03	3.97	3.72	3.42	3.92	2.87	3.84	3.09
	F	1.76										
	DF	10;877										
	P	<.07										
DEPRESSION	Mean	22.27	21.84	18.66	21.04	20.68	21.94	20.66	19.11	21.05	19.44	22.15
	Standard Dev.	7.38	7.78	7.68	6.83	7.75	8.30	7.72	7.91	7.01	7.83	5.23
	F	2.22										
	DF	10;877										
	P	<.05										
HOSTILITY	Mean	15.74	15.34	14.09	14.41	14.48	14.11	14.18	11.76	12.78	13.55	13.15
	Standard Dev.	5.23	5.12	5.68	5.31	5.82	5.49	4.62	4.93	4.56	5.78	4.15
	F	3.37										
	DF	10;877										
	P	<.01										
DYSPHORIA	Mean	49.27	48.40	43.31	45.35	45.25	46.32	45.28	40.23	43.99	43.29	46.05
	Standard Dev.	14.97	15.39	15.65	13.99	16.22	16.08	14.24	15.41	13.23	16.33	10.93
	F	2.15										
	DF	10;877										
	P	<.05										

Table 5

One-Way Analysis of Variance of MAACL Means
Across 3 Training Company Types

		BCT	AIT	CST
ANXIETY	Mean	10.97	10.17	10.02
	Standard Deviation	3.86	3.58	3.57
	F	5.30		
	DF	2;885		
	P	<.01		
DEPRESSION	Mean	20.71	21.11	20.01
	Standard Deviation	7.78	7.69	7.48
	F	1.54		
	DF	2;885		
	P	N.S.		
HOSTILITY	Mean	14.97	14.30	12.78
	Standard Deviation	5.41	5.36	5.11
	F	11.79		
	DF	2;885		
	P	<.001		
DYSPHORIA	Mean	46.65	45.58	42.81
	Standard Deviation	15.56	15.24	14.89
	F	4.47		
	DF	2;885		
	P	<.05		

Table 6

Number of Subjects Tested During BCT
Longitudinal Analysis

Company No.	Week Tested	N
1	Reception Station	70
	2	148
	4	150
	6	136
	8	125
2	Reception Station	78
	2	207
	4	201
	6	173
	8	170
3	Reception Station	78
	2	216
	4	181
	6	199
	8	188

Table 7

Significant Correlation ($p < .05$) Matrix of MCEI Discrepancy Scores,
Performance Indices, MAACL Scale Scores.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Stick Call	1.00																				
Firing		1.00																			
Phys. Training			1.00																		
Grad. Test				1.00																	
MAACL Anx.					1.00																
Depression						1.00															
Hostility							1.00														
Dysphoria								1.00													
MCEI Spont.									1.00												
Support										1.00											
Practicality											1.00										
Affiliation												1.00									
Order													1.00								
Insight														1.00							
Involvement															1.00						
Aggression																1.00					
Submission																	1.00				
Autonomy																		1.00			
Variety																			1.00		
Clarity																				1.00	
Stripping																					1.00

Table 8

Number of Subjects Tested in "Cross-Sectional,"
TIMEC and "Modified Longitudinal" Companies

Company	Company No.	Week Tested	No. of Subjects
Cross-Sectional	1	4	224
	2	4	136
	3	4	222
	4	4	221
	5	4	139
	6	4	112
	7	4	224
	8	4	154
TIMEC	1	4	136
	1	8	115
	2	4	98
	2	8	133
Modified-Longitudinal	1	4	188
	1	8	198
	2	4	202
	2	8	202
	3	4	131
	3	8	140

Tabl.

3-Way Analysis of NCEI Scale Scores by
Company x Scale x Time of Testing

Source of Variation	DF	SS	F	P
<u>Between Subjects</u>				
Companies (A)	2	212.04	13.12	.001
Subj. w. Groups (error)	308	16.15		
<u>Within Subjects</u>				
Testing Time (B)	3	161.05	39.66	.001
AB	6	96.15	23.68	.001
B x Subj. w. Groups (error)	924	4.06		
Scales (C)	14	1,446.90	243.17	.001
AC	6	241.27	40.54	.001
C x Subj. w. Groups (error)	4312	5.95		
BC	42	17.37	8.68	.001
ABC	84	9.48	4.74	.01
BC x Subj. w. Groups (error)	12936	2.00		

Table 10

Rank Order Correlation Coefficient Between MAACL,
MCEI Factor Scales and Performance Criteria
for Cross-Sectional Companies (N = 8)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Involvement	1.00		.69	.69	.67	.71				-.67					
2. Peer Cohesion		1.00					-.77		-.86		-.83				.70
3. Officer Support			1.00			.88	-.64			-.95	-.62				
4. Personal Status				1.00				-.67			-.69				
5. Order					1.00	.81									
6. Clarity						1.00				-.86					
7. Officer Control							1.00	.79	.79	.69	.81				
8. MAACL Anxiety								1.00	.79		.83				
9. MAACL Depression									1.00	.71	.98				
10. MAACL Hostility										1.00	.74				
11. MAACL Dysphoria											1.00				
12. AWOL, Art. 15												1.00			.79
13. Sick Call													1.00		.74
14. Test Scores														1.00	.60
15. Total Performance															1.00

R .67 = < .05

R .80 = < .01

Table 11

MCEI - Performance Scales and Rank Order
Correlation of Scale Totals with Performance Criteria

<u>Sick Call</u>		<u>Total Performance</u>		Item Discriminates Properly in 1st year?
Item No.	Scoring Direction	Item No.	Scoring Direction	
12	T	14	F	Yes
17	T	15	T	Yes
26	T	16	T	Yes
40	F	20	T	<u>No</u>
51	T	37	T	Yes
53	T	44	T	Yes
68	F	49	T	Yes
70	T	71	F	Yes
85	F	101	F	Yes
93	T	117	F	Yes
98	F	118	T	Yes
103	F	119	F	Yes
104	F	122	F	<u>No</u>
111	T	126	F	Yes
138	T	141	F	Yes

Rank Order Correlations

0.310	0.738	AWOL & Art. 15 Criterion
0.905	0.571	Sick Call Criterion
-0.048	0.667	Test Scores Criterion
0.524	0.952	Total Performance Criterion

Chart 1

MAACL Changes for Three
Longitudinal Companies

KEY:

Anxiety — — — — —
Depression • — • — •
Hostility • • • • •
Dysphoria + — + — +

\bar{x} SCORES

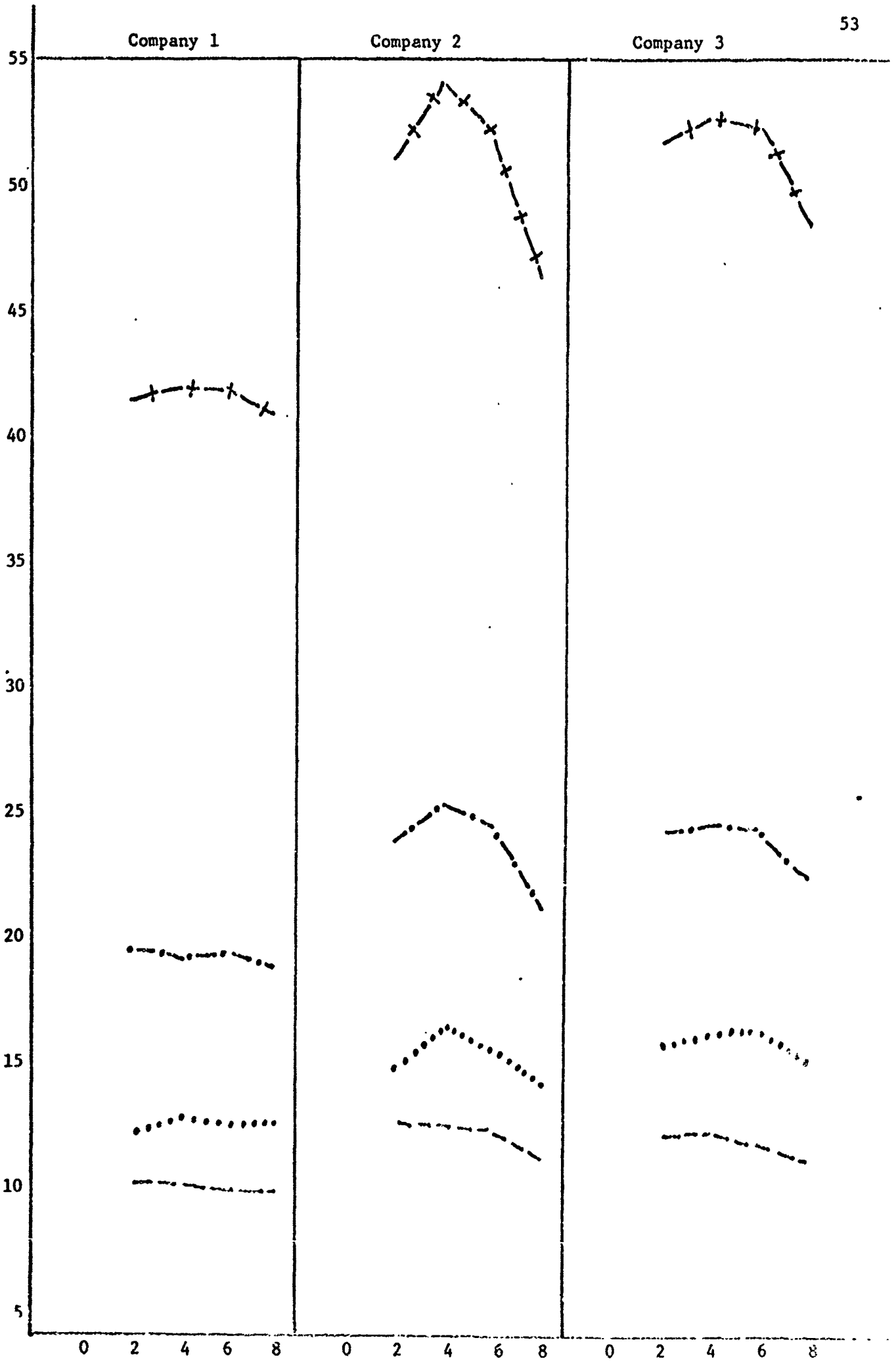
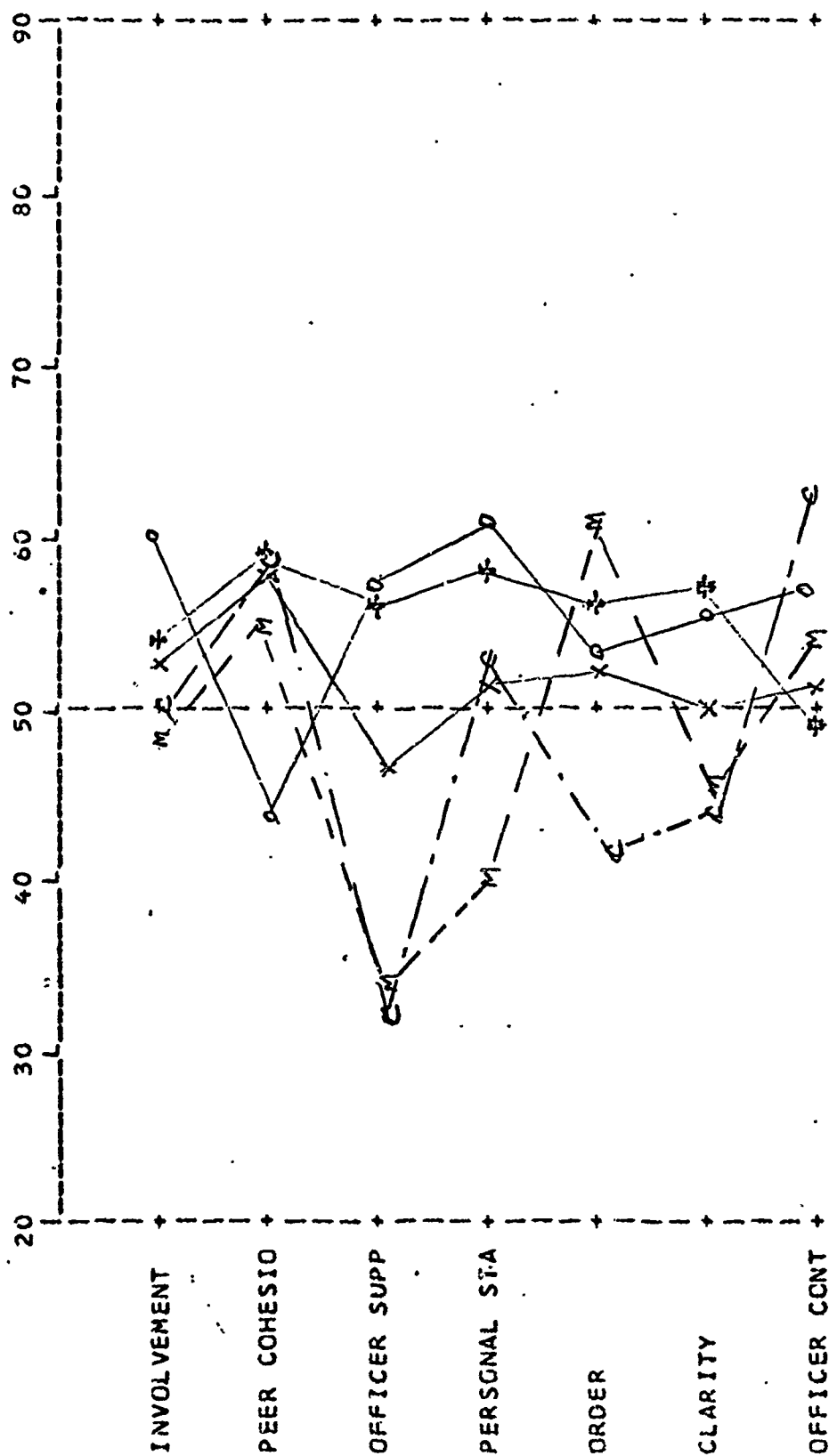


Chart 2

Profiles for Three Modified Longitudinal
and Two TIMEC Companies



Appendix 1

Multiple Affect Adjective Check List

MULTIPLE AFFECT

ADJECTIVE

CHECK LIST

BY MARVIN ZUCKERMAN
AND
BERNARD LUBIN

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DIRECTIONS: On this sheet you will find words which describe different kinds of moods and feelings. Blacken in the space beside the words which describe your feelings.

Some of the words may sound alike, but we want you to mark all the words that describe your feelings. Work rapidly.

- BE SURE TO USE A #2 PENCIL
- DO NOT USE A BALL POINT PEN OR INK
- KEEP YOUR ANSWER SHEET CLEAN
- DO NOT MAKE STRAY MARKS
- ERASE ERRORS COMPLETELY

NAME _____ 57

AGE _____ SEX _____ DATE _____ TIME _____

SCHOOL OR ORGANIZATION _____

GRADE OR OCCUPATION _____

		ADMINISTRATION									
		1	2	3	4	5	6	7	8	9	0
IDENTIFICATION NUMBER	1	0	1	2	3	4	5	6	7	8	9
	2	0	1	2	3	4	5	6	7	8	9
	3	0	1	2	3	4	5	6	7	8	9
	4	0	1	2	3	4	5	6	7	8	9
	5	0	1	2	3	4	5	6	7	8	9
	6	0	1	2	3	4	5	6	7	8	9
	7	0	1	2	3	4	5	6	7	8	9
	8	0	1	2	3	4	5	6	7	8	9
	9	0	1	2	3	4	5	6	7	8	9
	0	0	1	2	3	4	5	6	7	8	9

- | | | | |
|----------------|-----------------|---------------|-------------------|
| 1 ACTIVE | 34 DEVOTED | 67 INTERESTED | 100 SATISFIED |
| 2 ADVENTUROUS | 35 DISAGREEABLE | 68 IRRITATED | 101 SECURE |
| 3 AFFECTIONATE | 36 DISCONTENTED | 69 JEALOUS | 102 SCARY |
| 4 AFRAID | 37 DISCOURAGED | 70 JOYFUL | 103 SHY |
| 5 AGITATED | 38 DISGUSTED | 71 KINDLY | 104 SOOTHED |
| 6 AGREEABLE | 39 DISPLEASED | 72 LONELY | 105 STEADY |
| 7 AGGRESSIVE | 40 ENERGETIC | 73 LOST | 106 STUBBORN |
| 8 ALIVE | 41 ENRAGED | 74 LOVING | 107 STORMY |
| 9 ALONE | 42 ENTHUSIASTIC | 75 LOW | 108 STRONG |
| 10 AMABLE | 43 FEARFUL | 76 LUCKY | 109 SUFFERING |
| 11 AMUSED | 44 FINE | 77 MAD | 110 SULLEN |
| 12 ANGRY | 45 FIT | 78 MEAN | 111 SUNK |
| 13 ANNOYED | 46 FORLORN | 79 MEER | 112 SYMPATHETIC |
| 14 ANFUL | 47 FRANK | 80 MERRY | 113 TAME |
| 15 BASHFUL | 48 FREE | 81 MILD | 114 TENDER |
| 16 BITTER | 49 FRIENDLY | 82 MISERABLE | 115 TENSE |
| 17 BLUE | 50 FRIGHTENED | 83 NERVOUS | 116 TERRIBLE |
| 18 BORED | 51 FURIOUS | 84 OBLIGING | 117 TERRIFIED |
| 19 CALM | 52 GAY | 85 OFFENDED | 118 THOUGHTFUL |
| 20 CAUTIOUS | 53 GENTLE | 86 OUTRAGED | 119 TIVID |
| 21 CHEERFUL | 54 GLAD | 87 PANICKY | 120 TORMENTED |
| 22 CLEAN | 55 GLOOMY | 88 PATIENT | 121 UNDERSTANDING |
| 23 COMPLAINING | 56 GOOD | 89 PEACEFUL | 122 UNHAPPY |
| 24 CONTENTED | 57 GOOD-NATURED | 90 PLEASED | 123 UNSOCIABLE |
| 25 CONTRARY | 58 GRIM | 91 PLEASANT | 124 UPSET |
| 26 COOL | 59 HAPPY | 92 POLITE | 125 VEXED |
| 27 COOPERATIVE | 60 HEALTHY | 93 POWERFUL | 126 WARY |
| 28 CRITICAL | 61 HOPELESS | 94 QUIET | 127 WHOLE |
| 29 CROSS | 62 HOSTILE | 95 RECKLESS | 128 WILD |
| 30 CRUEL | 63 IMPATIENT | 96 REJECTED | 129 WILFUL |
| 31 DARING | 64 INCENSED | 97 HUMOR | 130 WILTED |
| 32 DESPERATE | 65 INDIGNANT | 98 SAD | 131 ACQUAYING |
| 33 DESTROYED | 66 INSPIRED | 99 SAFE | 132 YOUNG |

Appendix 2

Military Company Environment Index Form A and Scale Scoring Key

(Introduced to Subjects as Military Atmosphere Scale)

MILITARY ATMOSPHERE SCALE

Instructions

In this booklet there are 146 statements about Army companies. You are to decide which statements are true of your company and which are not. This questionnaire will be given to men in different environments so that the items will describe many different military units. Your answers do not have any effect on your position in the Army, and will be used for research purposes only.

Use the answer sheet for all your answers. When you think the statement is mostly true of your company, blacken the space under "T" beside the item number. If you think that a statement is mostly false, blacken the corresponding space under "F". Make your mark as long as the pair of lines, and completely fill the area between the pair of lines. If you change your mind, erase your first mark COMPLETELY.

Please be sure to answer every item

Military Atmosphere Scale

1. The officers spend more time with some EM than with others.
2. There is little time preparing EM for their next assignment.
3. The NCOs are not harsh when they give orders.
4. It's hard to get a group of EM together for card games or other off-duty activities.
5. The company gives passes easily.
6. The schedule of activities is pretty much the same from day to day.
7. EM don't much talk about their past.
8. The food is the best I've ever tasted.
9. EM put a lot of energy into what they do around here.
10. EM sometimes play practical jokes on each other.
11. A lot of interesting things go on in this company.
12. EM never know when an officer will ask to see them.
13. This company places strong emphasis on wearing exactly the right kind of clothing.
14. EM tend to hide their feelings from one another.
15. The more effective EM help the less effective ones.
16. It is clear how the skills being learned will help EM to be good soldiers.
17. This company is very strict about EM following the daily schedule.
18. There are groups of EM who hang around together a lot.
19. Many of the EM are not as neat as they could be.
20. EM tell each other about their personal problems.
21. NCOs here never do anything for the EM.
22. A lot of EM just seem to be "putting in their time" without really working.
23. The people here don't recognize a person's talents or interests.
24. It's hard to get people to argue around here.
25. There is great emphasis placed on everyone dressing and acting in exactly the same way.
26. EM know when the commander will be inspecting the company.
27. The EM have almost no say in the running of their barracks.
28. The EM perform details without being prodded.
29. The officers have very little time to encourage EM.
30. Most EM are more concerned with the past than with the future.
31. The company commander very seldom gives article 15's.
32. The company has very few social activities.
33. You are treated like a child here.
34. EM activities are carefully planned.

35. EM hardly ever discuss their sexual lives.
36. This is the best place I've ever been in.
37. EM are proud of this company.
38. EM in this company gripe a lot.
39. The NCOs and officers try new ways of running this company.
40. Things are sometimes very disorganized around here.
41. The NCOs and officers act on EM's suggestions.
42. A person's differences are respected in this company.
43. When EM disagree with each other, they keep it to themselves.
44. The NCOs and officers know what the EM want.
45. The EM here are expected to carry out their work well.
46. Sometimes EM are uncertain as to who is really running the company.
47. Nearly everyone here has some social activity planned for the weekends.
48. The EM's barracks are not as neat as they should be.
49. Personal problems are openly talked about.
50. The NCOs here are just terribly stupid.
51. Men in this unit seem bored most of the time.
52. NCOs and officers argue on how to run the company.
53. The work here is repetitious and boring.
54. If an EM breaks a rule, he clearly knows what will happen to him.
55. Being in this company helps a man to live up to his potential.
56. Very few EM have any responsibility in the company.
57. In this company, EM can talk freely with their NCOs.
58. EM rarely help each other.
59. It's hard to see the reason for much of what is done in the company.
60. EM can call some NCOs by their first names.
61. NCOs spend very little time talking with EM.
62. This is a very well organized company.
63. EM are rarely asked personal questions by the NCOs or officers.
64. I never want to leave this company.
65. Discussions in the barracks or company area are pretty interesting.
66. NCOs and officers accept the men's word.
67. EM often criticize or joke about their NCOs or officers.
68. There is frequent turnover of NCOs and officers in this unit.
69. People are always changing their minds here.
70. The company is strict about EM leaving the company area without saying where they're going.
71. In this company, it's hard to tell how EM are feeling.

72. Officers and NCOs take a personal interest in the EM's next assignment.
73. EM are told how their work or training will help them in the future.
74. EM who break minor company regulations are punished for it.
75. EM often do things together during off-duty hours.
76. Often the company area isn't very neat.
77. Officers and NCOs are interested in helping the EM learn more about themselves.
78. Being in this company makes you lose your self-respect.
79. NCOs dislike the EM in this company.
80. Nobody ever volunteers around here.
81. EM in this unit rarely argue.
82. There is very little to do around here over the weekends.
83. If an EM's work schedule is changed, he is always told why.
84. NCOs rarely go along with EM's requests.
85. It's o.k. to act a little different around here.
86. Officers sometimes don't show up when they're supposed to.
87. There is very little emphasis on what men will do when they leave this company.
88. EM may interrupt a NCO while he is speaking.
89. There is very little sharing of things among the men.
90. NCOs make sure that the company area is always neat.
91. EM rarely talk about their personal problems with each other.
92. NCOs in this company will break about any rule to help an EM.
93. EM are pretty busy all of the time.
94. In this company, NCOs and officers think it is a healthy thing to argue.
95. Activities on some days are quite different than on others.
96. EM never know when they will be transferred (from this company).
97. Men feel more capable now than when they first entered the company.
98. EM are expected to take leadership in the company.
99. EM tend to hide their feelings from the NCOs and officers.
100. Each EM is treated differently in this company, depending upon his problem.
101. EM are encouraged to learn new ways to do things.
102. Obeying rules in this company seems to be more important than getting the work done.
103. NCOs and officers help new men to get oriented to the company.
104. The Day Room is often messy.
105. EM are encouraged to talk their problems over with one another.
106. The officers and NCOs don't really know their jobs.
107. EM don't do anything around here unless they are ordered to.

108. EM here rarely become angry.
109. EM in this unit all have about the same background and interests.
110. NCOs tell EM when they do a good job.
111. NCOs are constantly checking on the men and supervise them very closely.
112. It is not possible to be an individual here.
113. EM here are encouraged to express their opinions.
114. NCOs have little time to encourage EM.
115. NCOs care more about how EM are feeling than about their practical problems.
116. EM are rarely kept waiting when they ask to see their NCOs and officers.
117. It takes a long time for EM to get to know one another in this company.
118. The NCOs and officers set the example for neatness and orderliness.
119. It's not safe for EM to discuss their personal problems around here.
120. This is the most interesting place I could possibly imagine.
121. EM here really try to improve and learn.
122. NCOs sometimes argue among themselves.
123. Company rules and policies are constantly changing.
124. A man's background is not considered in what others think of him.
125. NCOs don't explain enough about how and why something has to be done.
126. EM are encouraged to think and act for themselves.
127. EM are careful of what they say when NCOs and officers are around.
128. NCOs and officers go out of their way to help EM.
129. EM are encouraged to get their personal lives in order before leaving the company.
130. EM are always being reminded that they must show respect to their superior officers.
131. EM around here care about each other.
132. The barracks usually look a little messy.
133. NCOs encourage EM to talk about their work problems.
134. In this company, none of the NCOs ever talk to any of the EM.
135. Men have very little pride in this company.
136. Fighting among EM almost always result in punishment.
137. Everyone here has pretty much the same opinion about how the company should be run.
138. Men are ridiculed in front of others.
139. Regulations in the company are clearly understood by the EM.
140. NCOs and officers discourage criticism.
141. NCOs get chewed out in front of their men.
142. NCOs "cover" for each other.
143. Hours of work are very irregular.

- 5 -

144. EM individual talents are recognized.
145. Many of the inspections and details seem meaningless.
146. Officers and NCOs expect too much of the men.

SCALES

65

SPONTANEITY

- + 5 (D) The company gives passes easily.
- 14 (A) EM tend to hide their feelings from one another.
- + 28 (E) The EM perform details without being prodded.
- 43 (E) When EM disagree with each other, they keep it to themselves.
- + 57 (C) In this company, EM can talk freely with their NCOs.
- 71 (C) In this company, it's hard to tell how EM are feeling.
- + 85 (E) It's o.k. to act a little different around here.
- 99 (A) EM tend to hide their feelings from the NCOs and officers.
- + 113 (A) EM here are encouraged to express their opinions.
- 127 (E) EM are careful of what they say when NCOs and officers are around.

SUPPORT

- 1 (A) The officers spend more time with some EM than with others.
- + 15 (D) The more effective EM help the less effective ones.
- 29 (C) The officers have very little time to encourage EM.
- + 44 (B) The NCOs and officers know what the EM want.
- 58 (E) EM rarely help each other.
- + 72 (D) Officers and NCOs take a personal interest in the EM's next assignment.
- 86 (A) Officers sometimes don't show up when they're supposed to.
- + 100 (A) Each EM is treated differently in this company, depending upon his problem.
- 114 (B) NCOs have little time to encourage EM.
- + 128 (A) NCOs and officers go out of their way to help EM.
- + 142 (A) NCOs "cover" for each other.
- 146 (B) Officers and NCOs expect too much of the men.

PRACTICALITY

- 2 (B) There is little time preparing EM for their next assignment.
- + 16 (D) It is clear how the skills being learned will help EM to be good soldiers.
- 30 (B) Most EM are more concerned with the past than with the future.
- + 45 (E) The EM here are expected to carry out their work well.
- 59 (C) It's hard to see the reason for much of what is done in the company.
- + 73 (E) EM are told how their work or training will help them in the future.
- 87 (B) There is very little emphasis on what men will do when they leave this company.
- + 101 (C) EM are encouraged to learn new ways to do things.
- 115 (E) NCOs care more about how EM are feeling than about their practical problems.
- + 129 (C) EM are encouraged to get their personal lives in order before leaving the company.

AFFILIATION

- 4 (C) It's hard to get a group of EM together for card games or other off-duty activities.
- + 18 (E) There are groups of EM who hang around together a lot.
- 32 (E) The company has very few social activities.
- + 47 (D) Nearly everyone here has some social activity planned for the weekends.
- 61 (C) NCOs spend very little time talking with EM.
- + 75 (A) EM often do things together during off-duty hours.
- 89 (A) There is very little sharing of things among the men.
- + 103 (B) NCOs and officers help new men to get oriented to the company.
- 117 (E) It takes a long time for EM to get to know one another in this company.
- + 131 (A) EM around here care about each other.

NOT REPRODUCIBLE

ORDER

- + 6 (C) The schedule of activities is pretty much the same from day to day.
- 19 (E) Many of the EM are not as neat as they could be.
- + 34 (D) EM activities are carefully planned.
- 48 (C) The EM's barracks are not as neat as they should be.
- + 62 (C) This is a very well organized company.
- 76 (A) Often the company area isn't very neat.
- + 90 (E) NCOs make sure that the company area is always neat.
- 104 (A) The Day Room is often messy.
- + 118 (A) The NCOs and officers set the example for neatness and orderliness.
- 132 (A) The barracks usually look a little messy.
- 143 (D) Hours of work are very irregular.

NOT REPRODUCIBLE

INSIGHT

- 7 (E) EM don't much talk about their past.
- + 20 (B) EM tell each other about their personal problems.
- 35 (E) EM hardly ever discuss their sexual lives.
- + 49 (E) Personal problems are openly talked about.
- 63 (E) EM are rarely asked personal questions by the NCOs or officers.
- + 77 (C) Officers and NCOs are interested in helping the EM learn more about themselves.
- 91 (B) EM rarely talk about their personal problems with each other.
- + 105 (A) EM are encouraged to talk their problems over with one another.
- 119 (A) It's not safe for EM to discuss their personal problems around here.
- + 133 (A) NCOs encourage EM to talk about their work problems.

INVOLVEMENT

- + 9 (D) EM put a lot of energy into what they do around here.
- 22 (E) A lot of EM just seem to be "putting in their time" without really working.
- + 37 (D) EM are proud of this company.
- 51 (A) Men in this unit seem bored most of the time.
- + 65 (C) Discussions in the barracks or company area are pretty interesting.
- 80 (C) Nobody ever volunteers around here.
- + 93 (E) EM are pretty busy all of the time.
- 107 (B) EM don't do anything around here unless they are ordered to.
- + 121 (B) EM here really try to improve and learn.
- 135 (C) Men have very little pride in this company.

NOT REPRODUCIBLE

AGGRESSION

- + 10 (E) EM sometimes play practical jokes on each other.
- 24 (E) It's hard to get people to argue around here.
- + 38 (C) EM in this company gripe a lot.
- + 52 (E) NCOs and officers argue on how to run the company.
- + 67 (E) EM often criticize or joke about their NCOs or officers.
- 81 (E) EM in this unit rarely argue.
- + 94 (A) In this company, NCOs and officers think it is a healthy thing to argue.
- 108 (E) EM here rarely become angry.
- + 122 (A) NCOs sometimes argue among themselves.
- 136 (C) Fighting among EM almost always result in punishment.

SUBMISSION

- 3 (A) The NCOs are not harsh when they give orders.
- + 17 (E) This company is very strict about EM following the daily schedule.
- 31 (C) The company commander very seldom gives article 15's.
- 46 (C) Sometimes EM are uncertain as to who is really running the company.
- 60 (E) EM can call some NCOs by their first names.
- + 74 (E) EM who break minor company regulations are punished for it.
- 88 (E) EM may interrupt a NCO while he is speaking.
- + 102 (E) Obeying rules in this company seems to be more important than getting the work done.
- 116 (A) EM are rarely kept waiting when they ask to see their NCOs and officers.
- + 130 (E) EM are always being reminded that they must show respect to their superior officers.
- + 141 (E) NCOs get chewed out in front of their men.

NOT REPRODUCIBLE

AUTONOMY

- 13 (E) This company places strong emphasis on wearing exactly the right kind of clothing.
- 27 (E) The EM have almost no say in the running of their barracks.
- + 41 (A) The NCOs and officers act on EM's suggestions.
- 56 (B) Very few EM have any responsibility in the company.
- 70 (D) The company is strict about EM leaving the company area without saying where they're going.
- 84 (E) NCOs rarely go along with EM's requests.
- + 98 (C) EM are expected to take leadership in the company.
- 111 (C) NCOs are constantly checking on the men and supervise them very closely.
- + 126 (C) EM are encouraged to think and act for themselves.
- 140 (E) NCOs and officers discourage criticism.

VARIETY

- + 11 (D) A lot of interesting things go on in this company.
- 25 (E) There is great emphasis placed on everyone dressing and acting in exactly the same way.
- + 39 (C) The NCOs and officers try new ways of running this company.
- 53 (C) The work here is repetitious and boring.
- + 68 (C) There is frequent turnover of NCOs and officers in this unit.
- 82 (A) There is very little to do around here over the weekends.
- + 95 (C) Activities on some days are quite different than on others.
- 102 (E) EM in this unit all have about the same background and interests.
- + 123 (C) Company rules and policies are constantly changing.
- 137 (B) Everyone here has pretty much the same opinion about how the company should be run.

NOT REPRODUCIBLE

CLARITY

- 12 (B) EM never know when an officer will ask to see them.
- + 20 (A) EM know when the commander will be inspecting the company.
- 30 (E) Things are sometimes very disorganized around here.
- + 37 (D) If an EM breaks a rule, he clearly knows what will happen to him.
- 39 (E) People are always changing their minds here.
- + 83 (A) If an EM's work schedule is changed, he is always told why.
- 96 (B) EM never know when they will be transferred (from this company).
- + 110 (C) NCOs tell EM when they do a good job.
- 125 (C) NCOs don't explain enough about how and why something has to be done.
- + 139 (C) Regulations in the company are clearly understood by the EM.
- 145 (B) Many of the inspections and details seem meaningless.

STRIPPING

- + 23 (E) The people here don't recognize a person's talents or interests.
- + 33 (O) You are treated like a child here.
- 42 (A) A person's differences are respected in this company.
- 55 (D) Being in this company helps a man to live up to his potential.
- 66 (C) NCOs and officers accept the men's word.
- + 78 (A) Being in this company makes you lose your self-respect.
- 97 (D) Men feel more capable now than when they first entered the company.
- + 112 (D) It is not possible to be an individual here.
- + 124 (A) A man's background is not considered in what others think of him.
- + 126 (E) Men are ridiculed in front of others.
- 127 (E) Each individual talents are recognized.

NOT REPRODUCIBLE

RESPONSE SET

Halo Inconsistency

- + + 8 (E) The food is the best I've ever tasted.
- + 21 (E) NCCs here never do anything for the EM.
- + + 36 (E) This is the best place I've ever been in.
- + 50 (D) The NCCs here are just terribly stupid.
- + + 64 (E) I never want to leave this company.
- + 79 (A) NCCs dislike the EM in this company.
- + + 92 (E) NCCs in this company will break about any rule to help an EM.
- + 106 (E) The officers and NCCs don't really know their jobs.
- + + 120 (E) This is the most interesting place I could possibly imagine.
- + 134 (E) In this company, none of the NCCs ever talk to any of the EM.

NOT REPRODUCIBLE

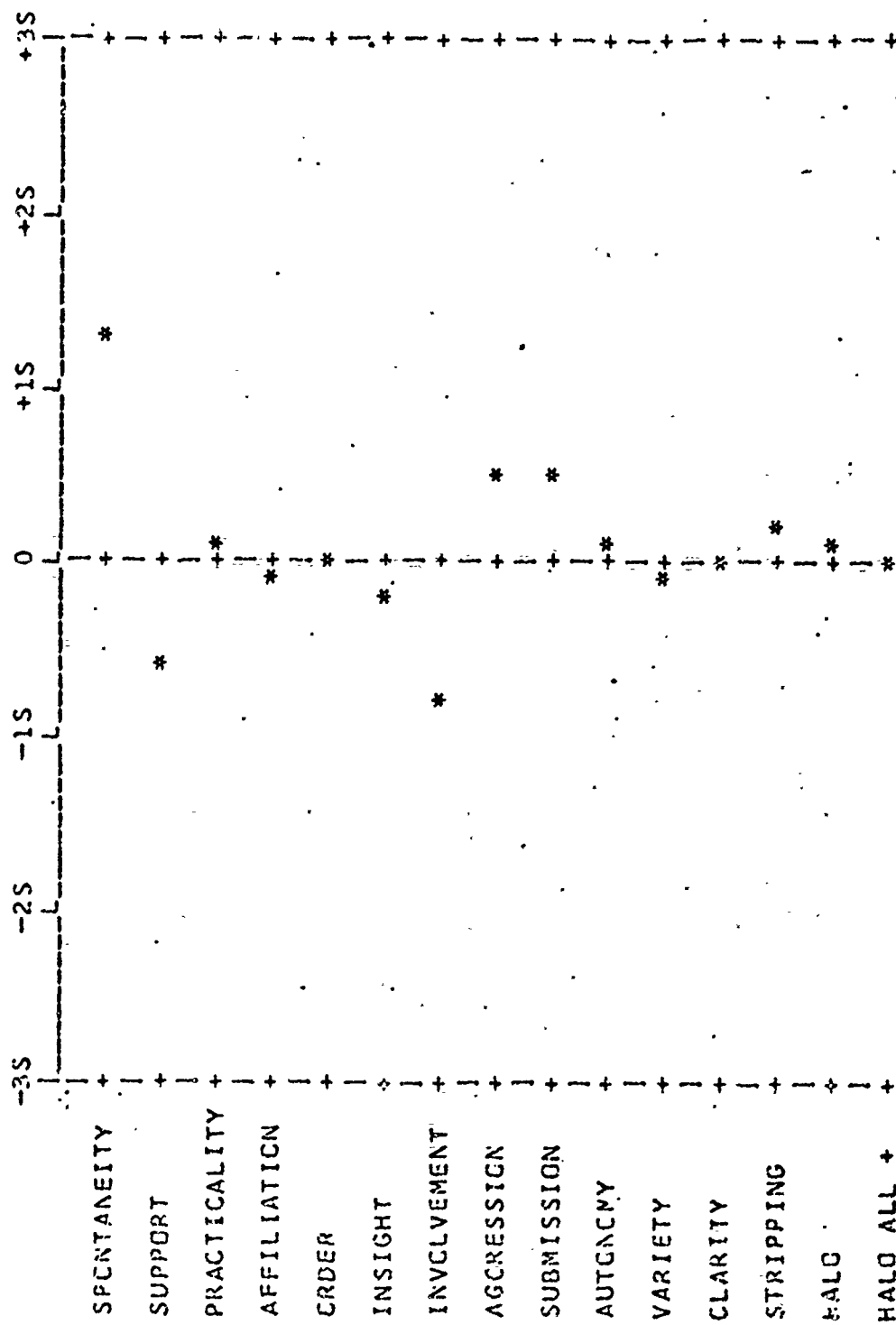
Appendix 3

BCT, AIT and CST Company Profiles
on MCEI

(Initially Presented as the Military Atmosphere Scale)

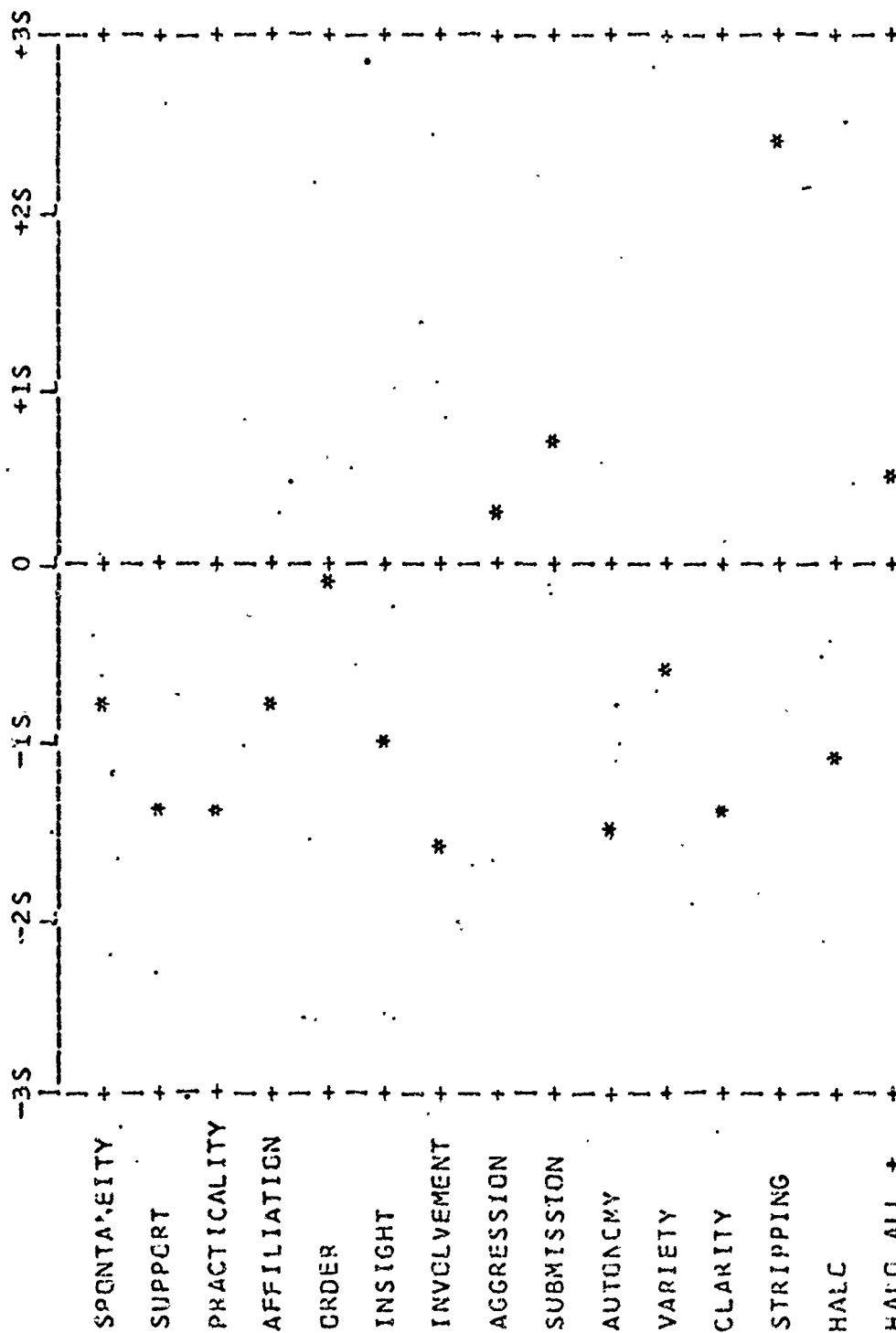
MILITARY ATMOSPHERE SCALE PROFILES (BASED ON NORMS FOR 15 COMPANIES)

BCT 851 HIGH



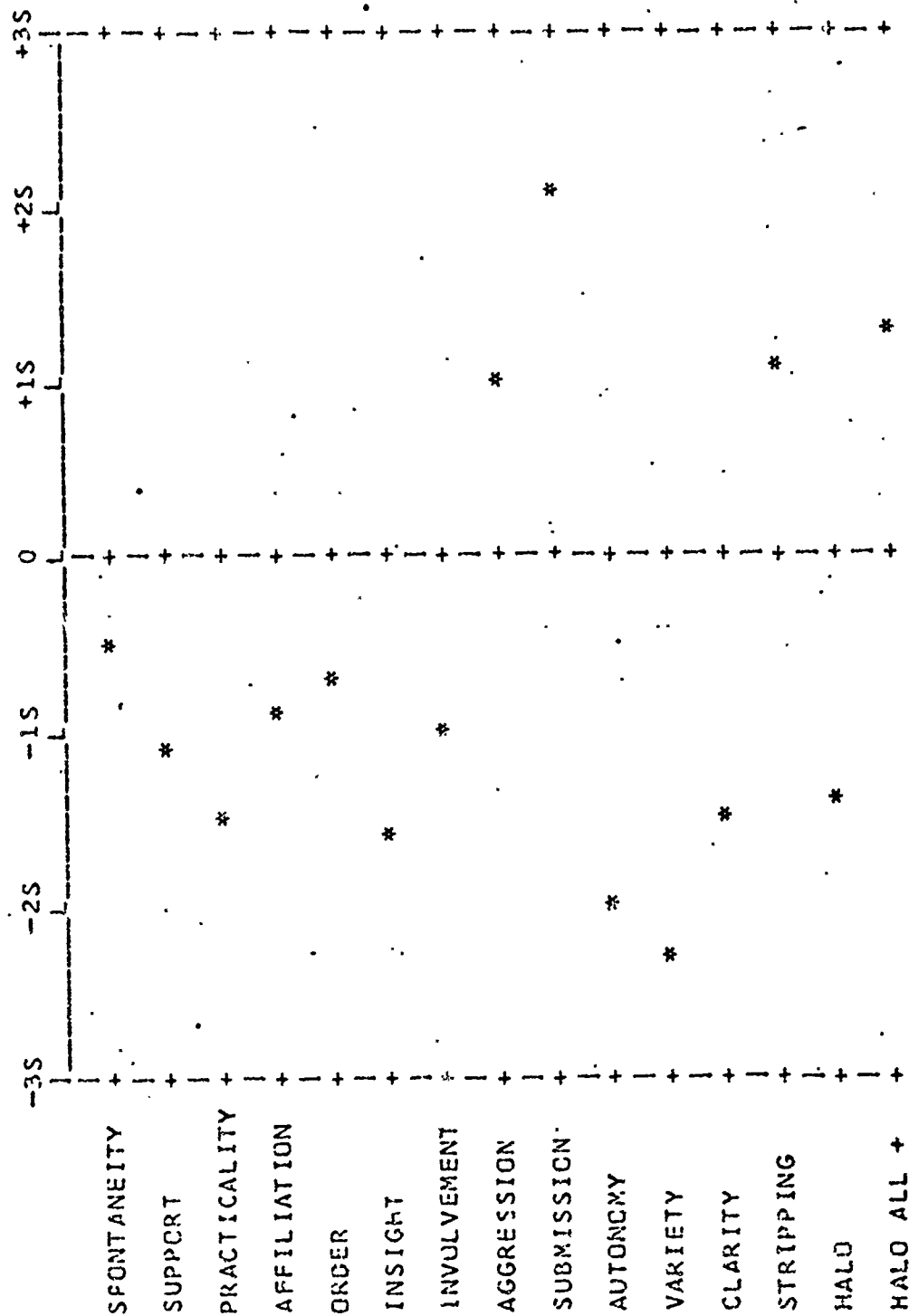
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BCT 351 HIGH



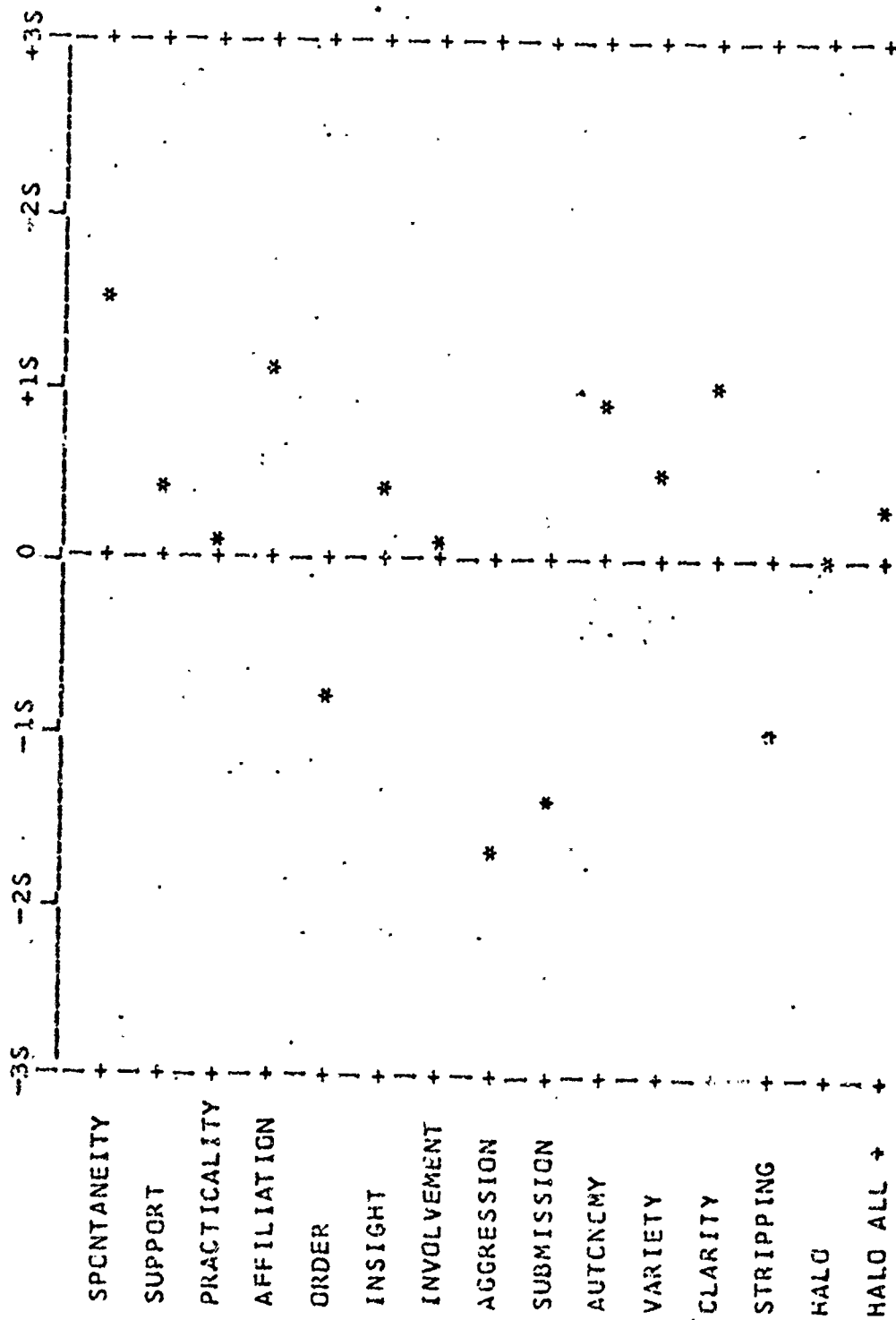
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BCT 151 LOW



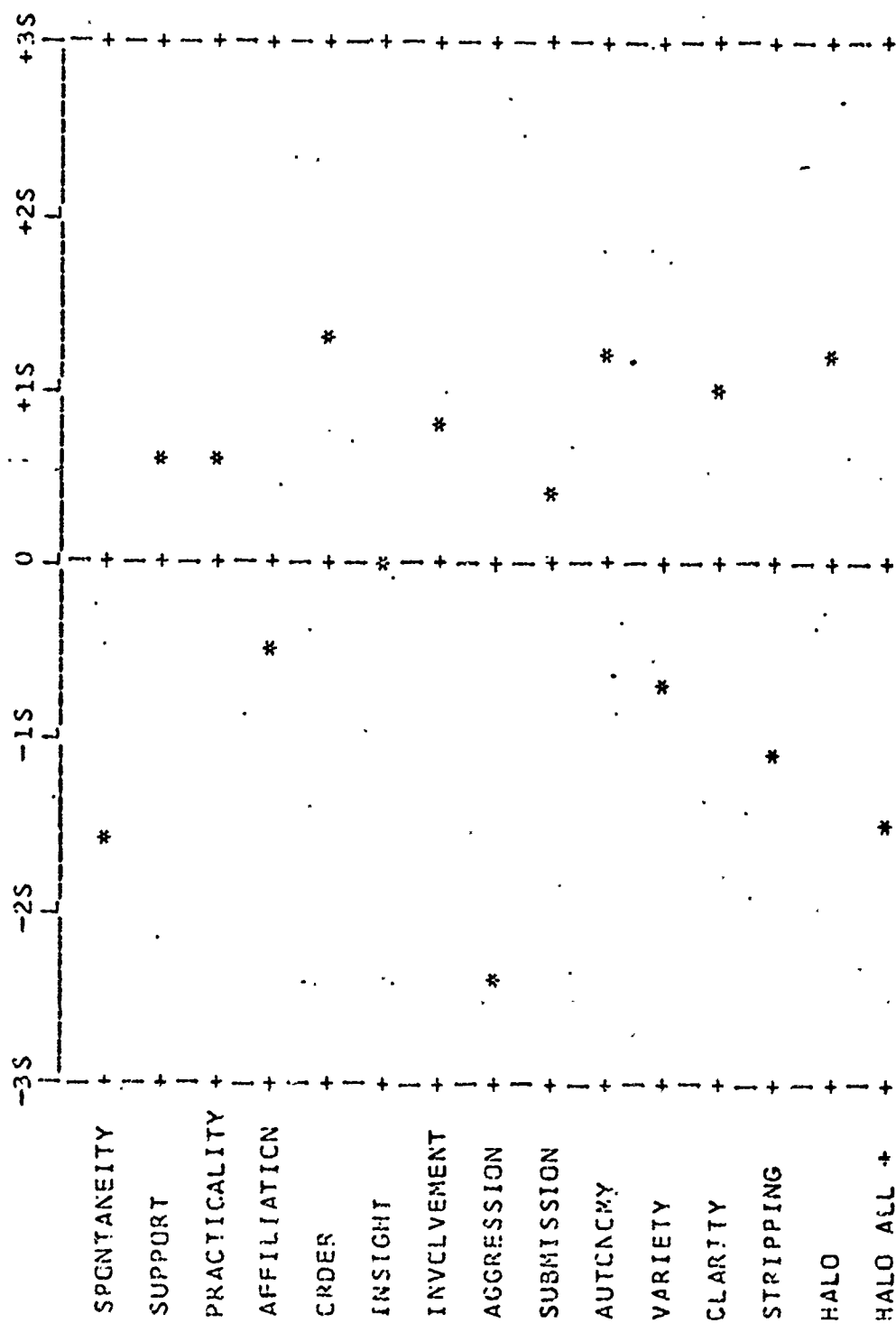
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BCT 451 LOW



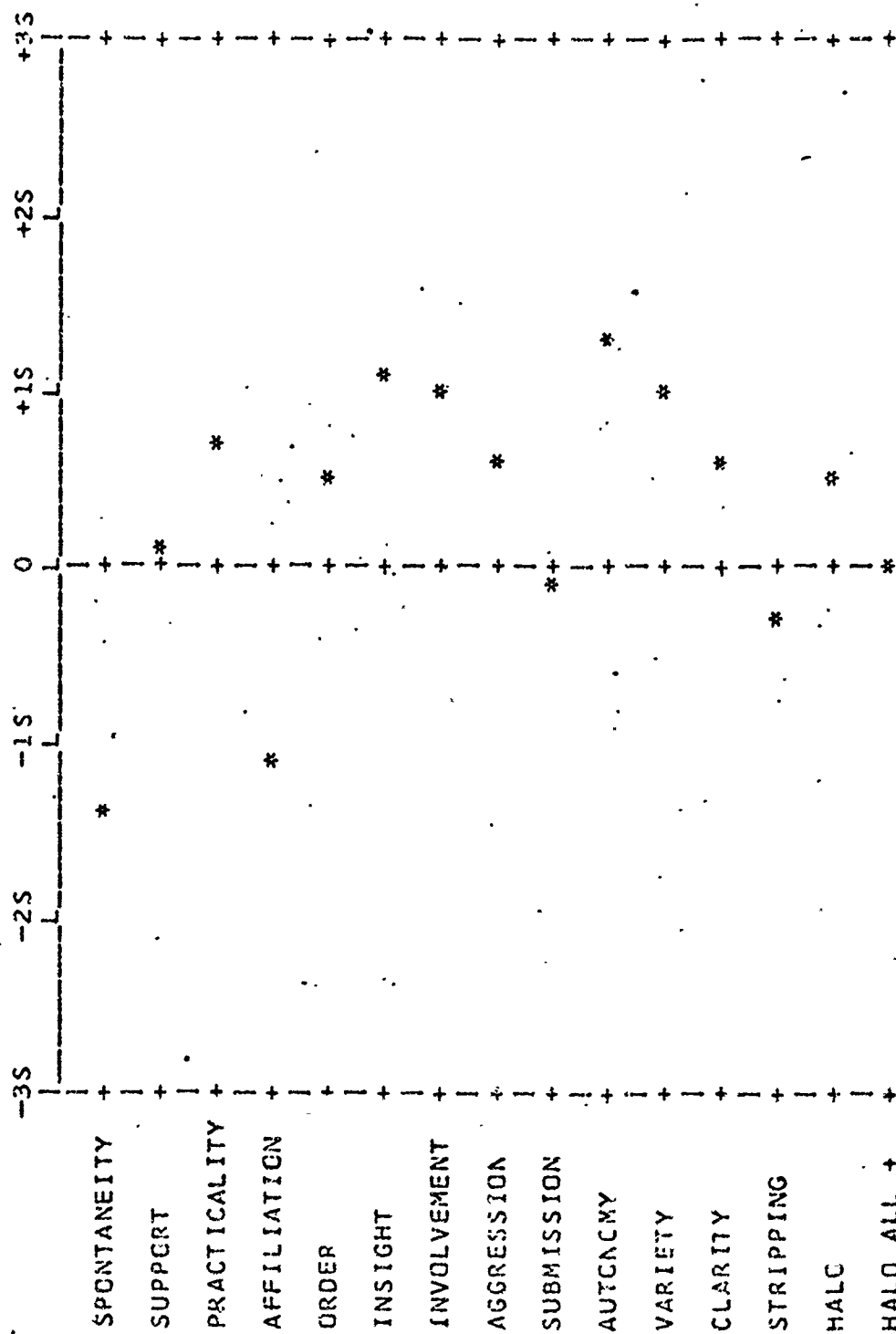
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AIT 412 HIGH



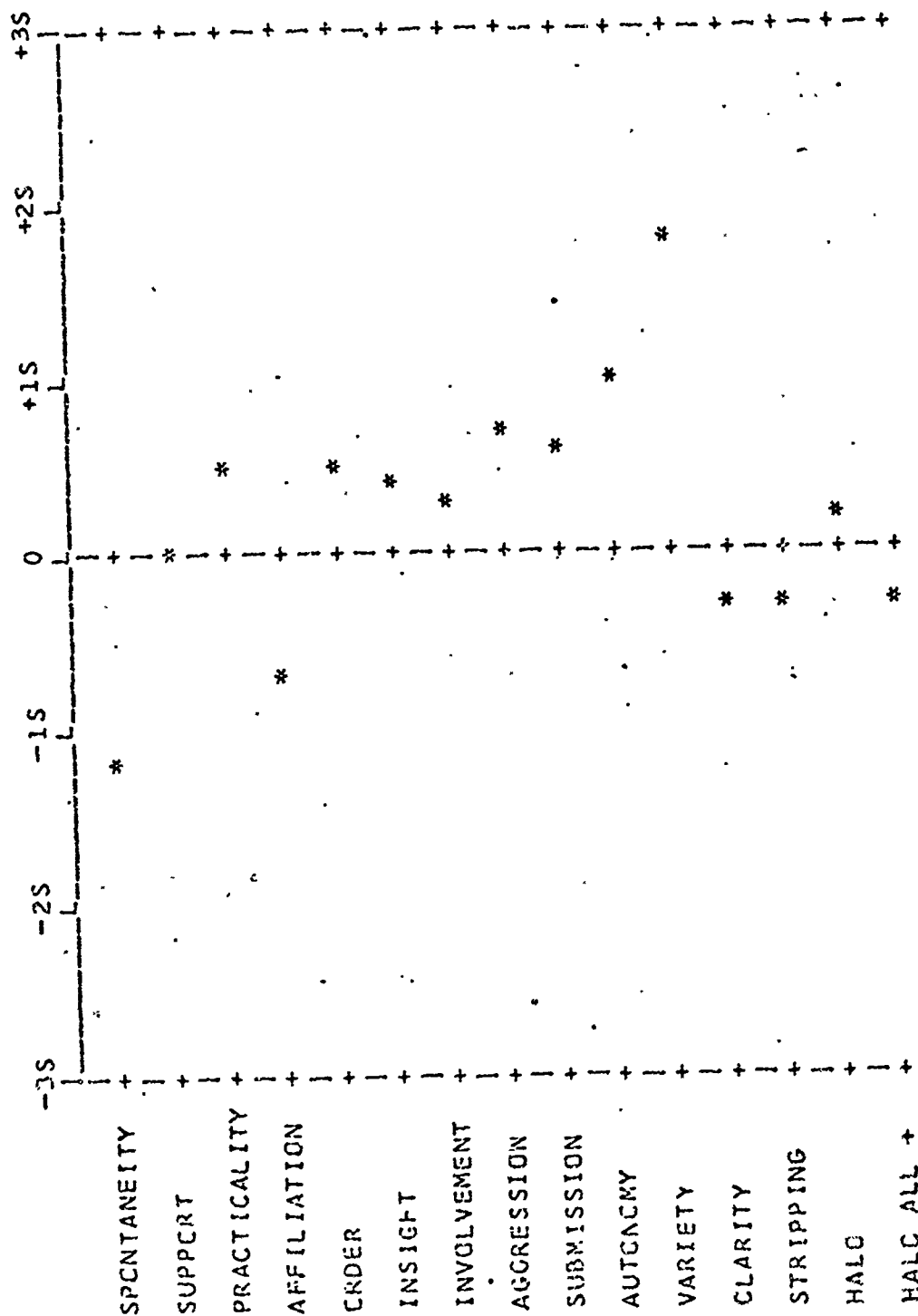
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AIT 332 HIGH



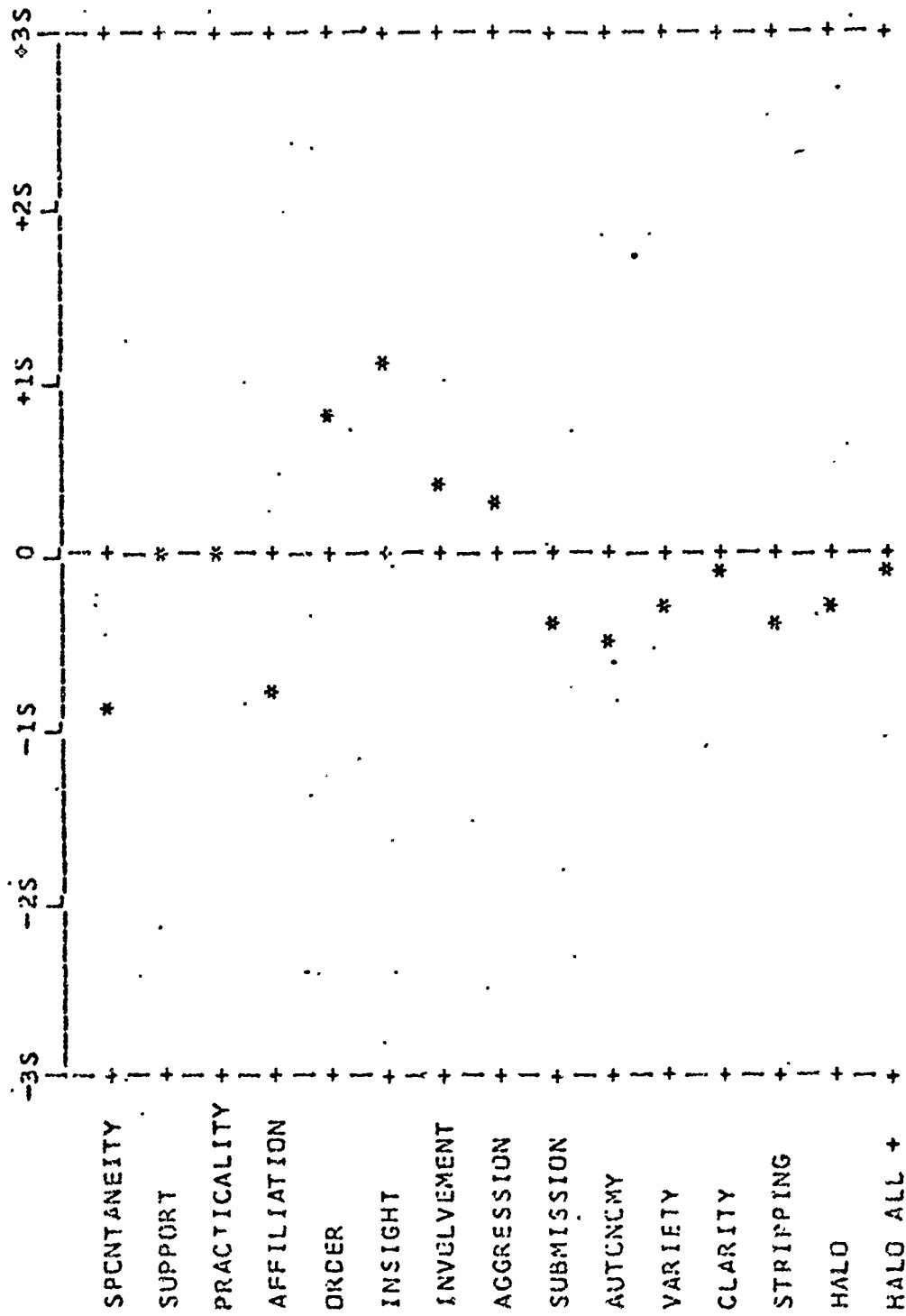
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AIT 222 LOW



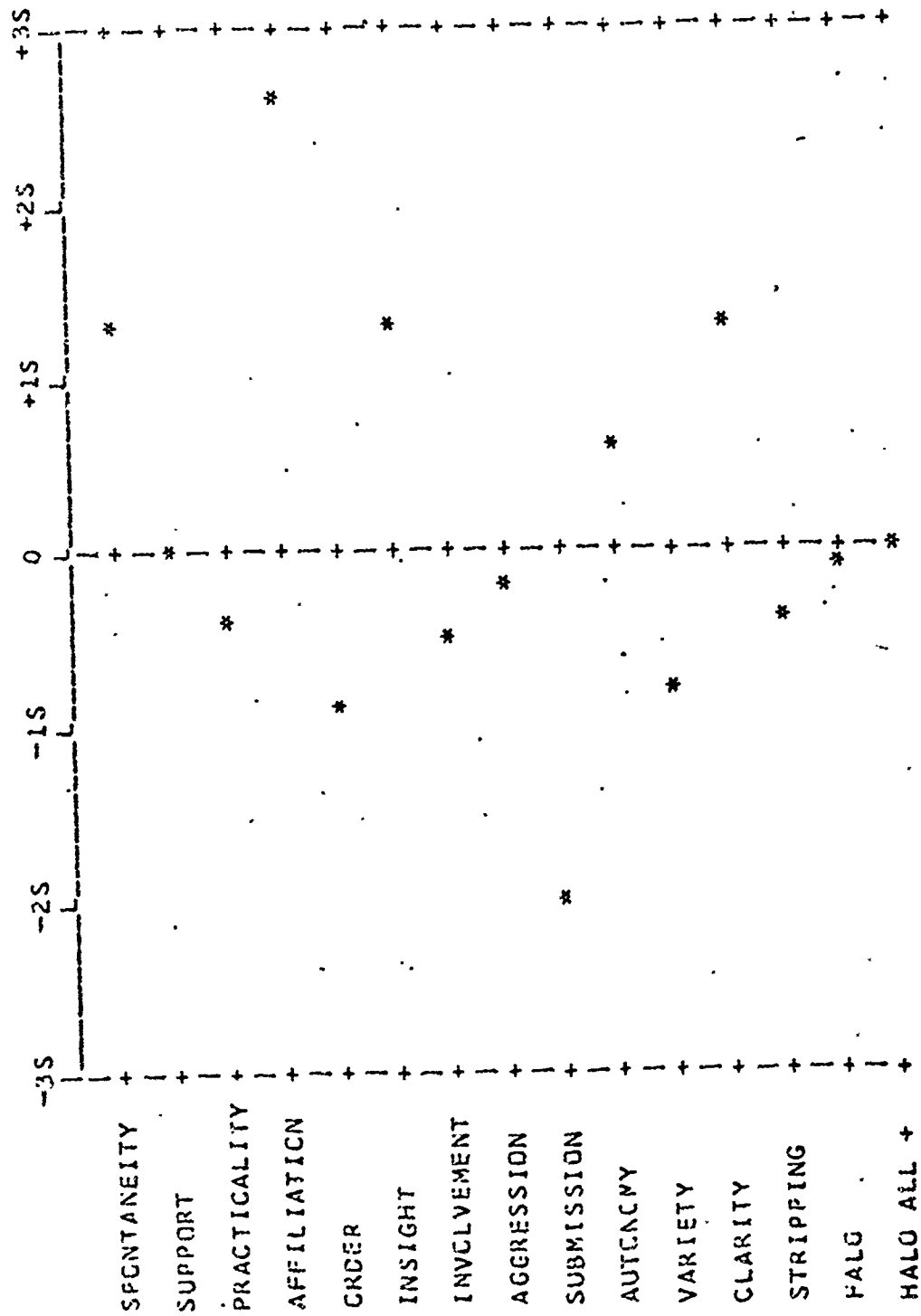
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AIT 512 LOW



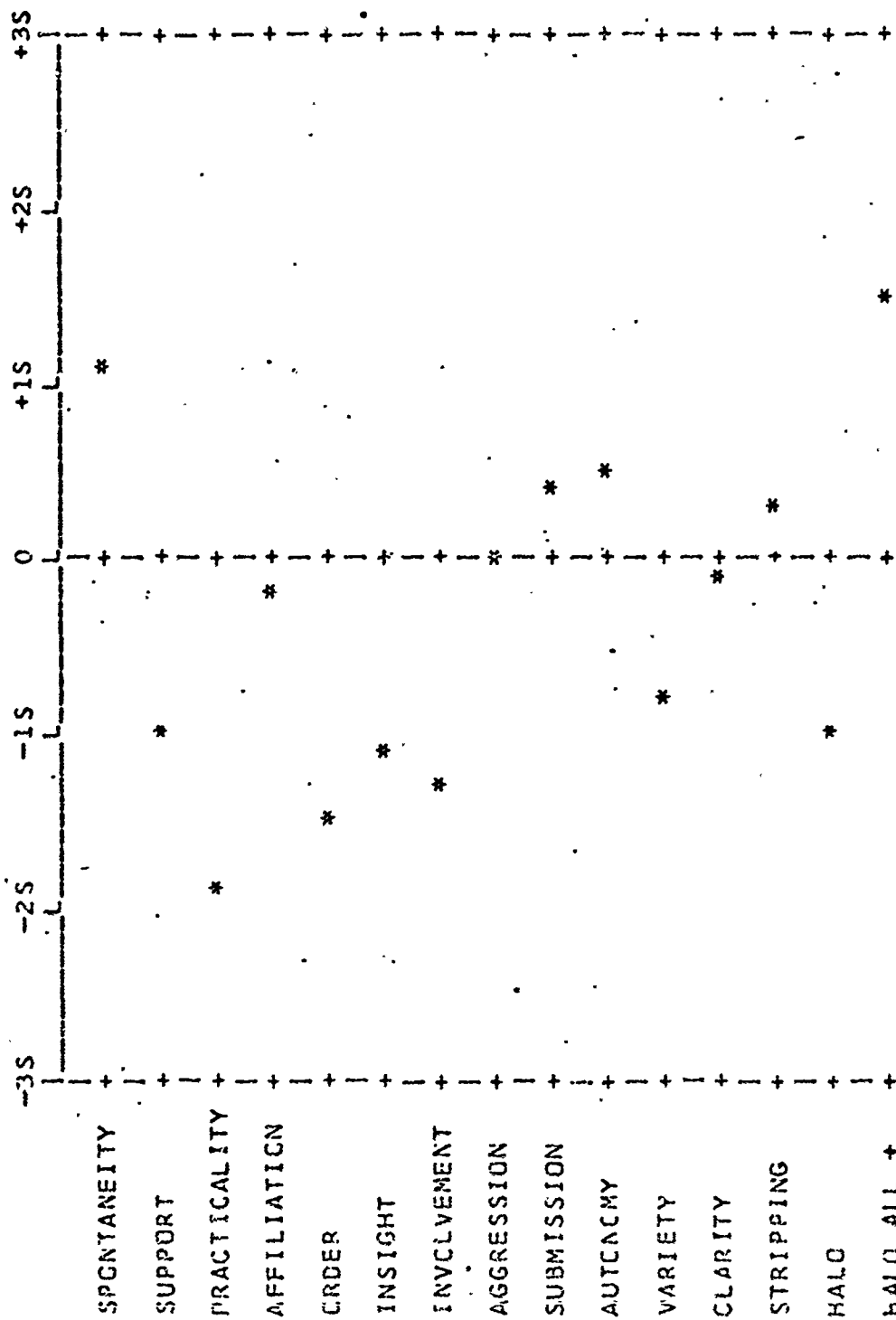
MILITARY ATMOSPHERE SCALE PROFILES (BASED ON NORMS FOR 15 COMPANIES)

UCT 143 HIGH



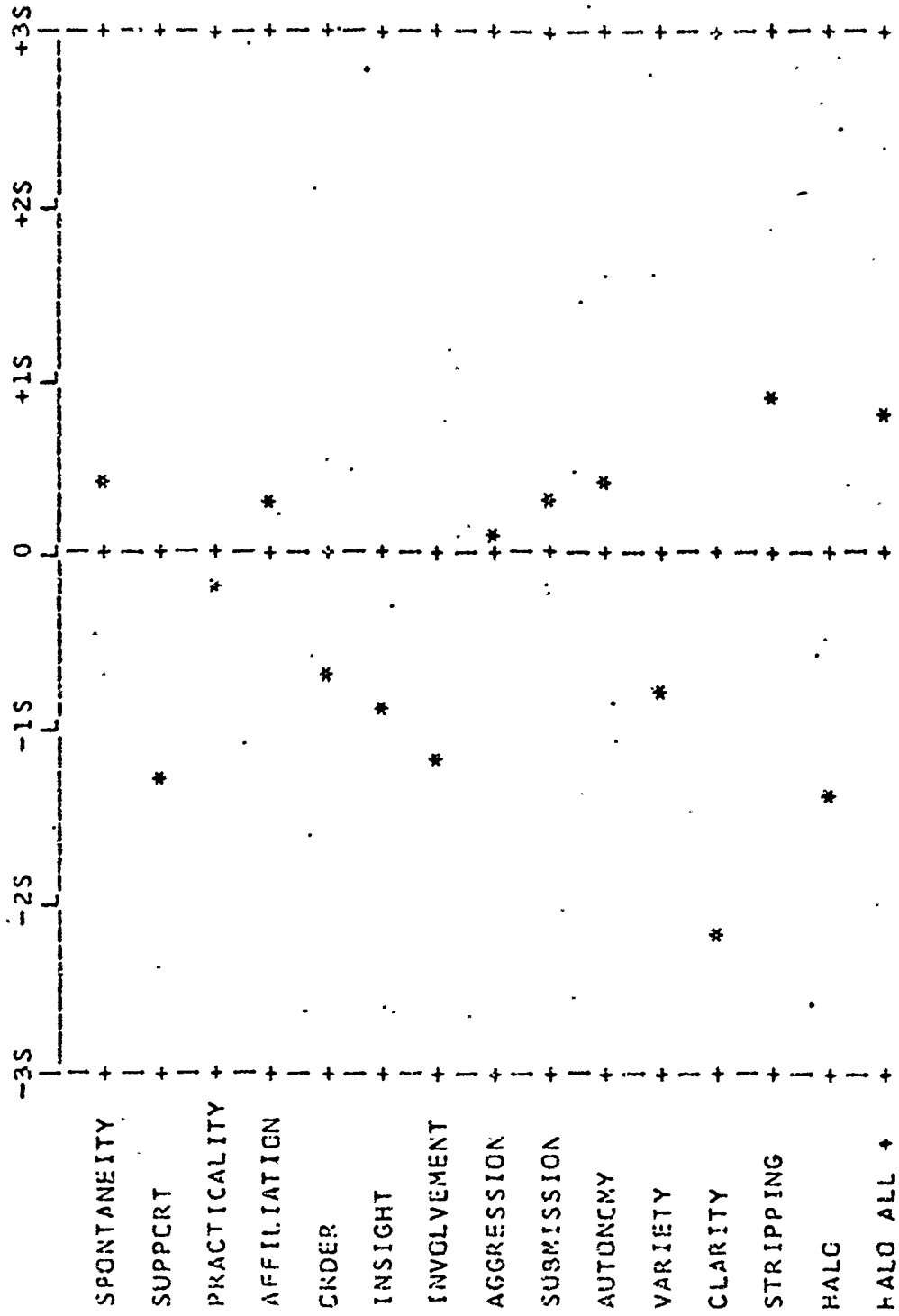
MILITARY ATMOSPHERE SCALE PROFILES (BASED ON NORMS FOR 15 COMPANIES)

BCT 333 HIGH



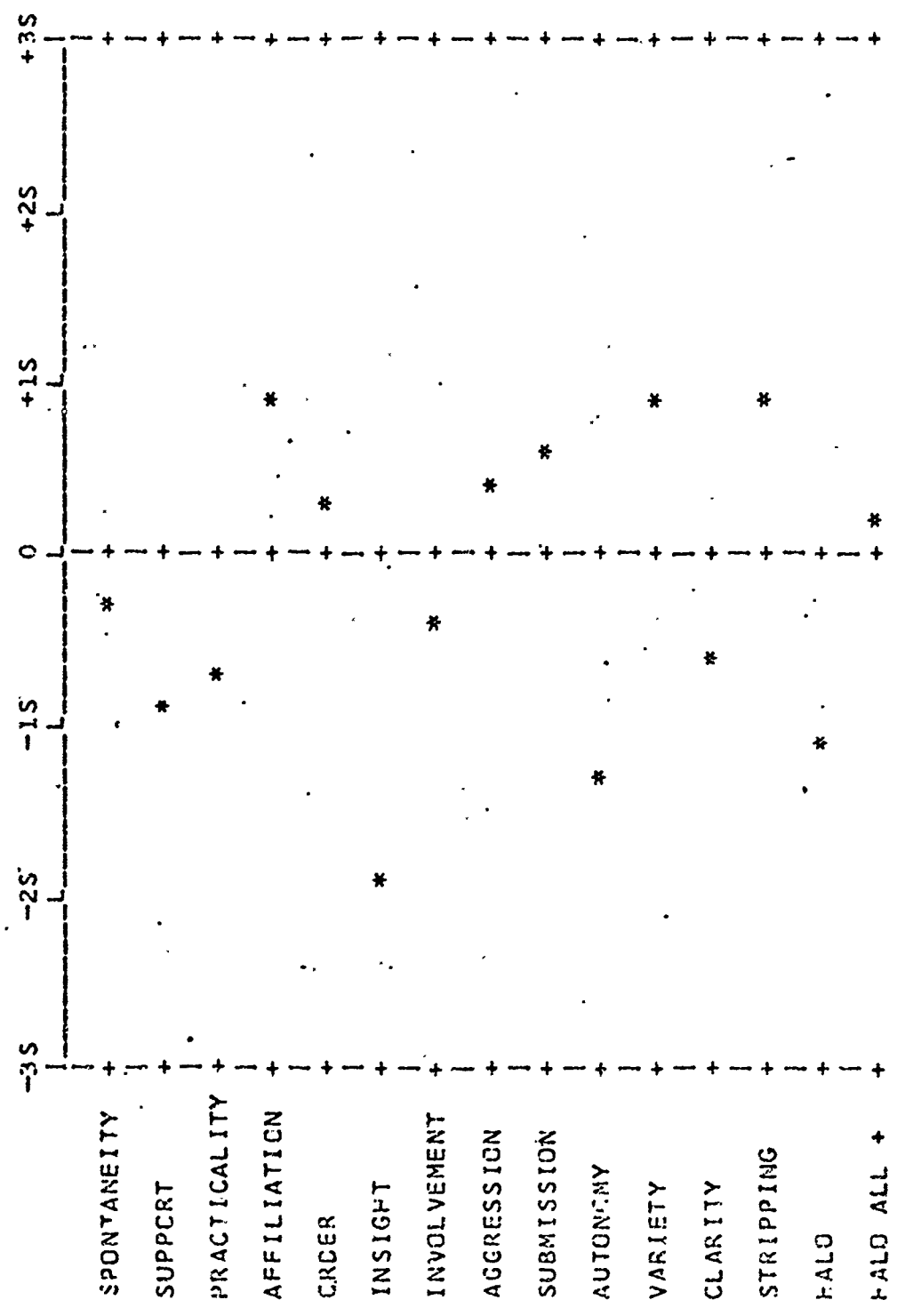
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BCT 113 LOW



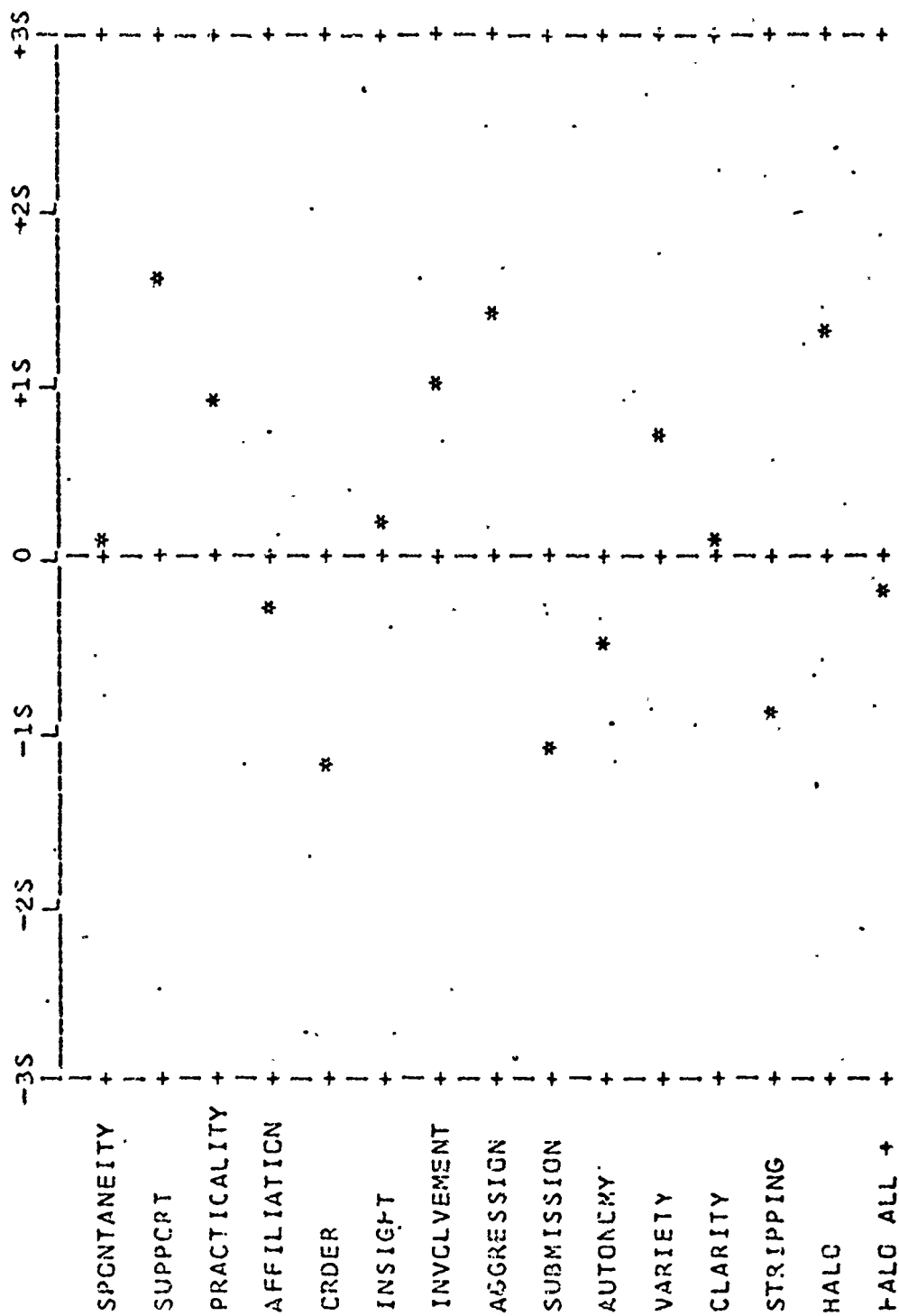
MILITARY ATMOSPHERE SCALE PROFILES
(BASED ON NORMS FOR 15 COMPANIES)

DCT 242 LOW



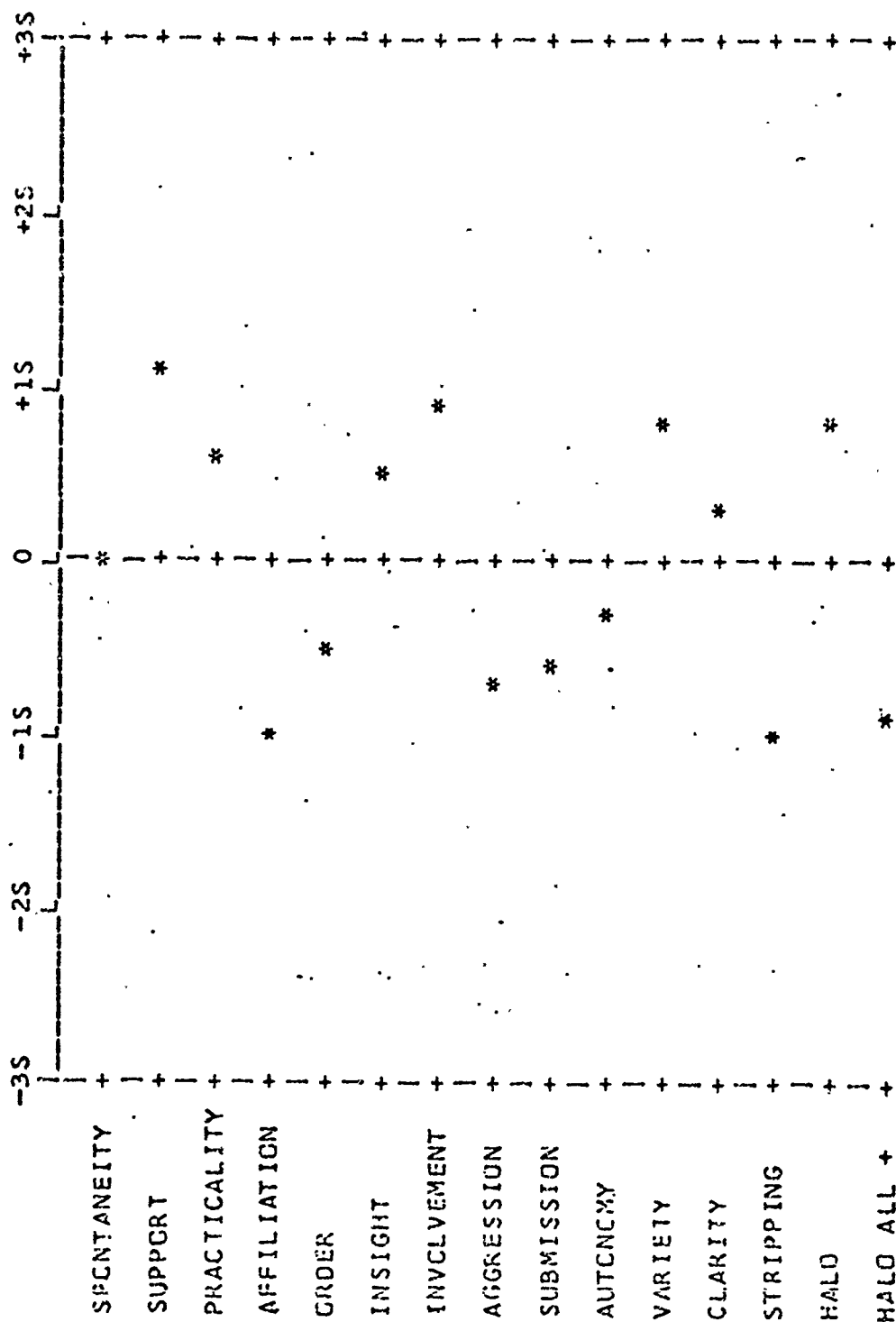
MILITARY ATMOSPHERE SCALE PROFILES (BASED ON NORMS FOR 15 COMPANIES)

CUT 414 HIGH



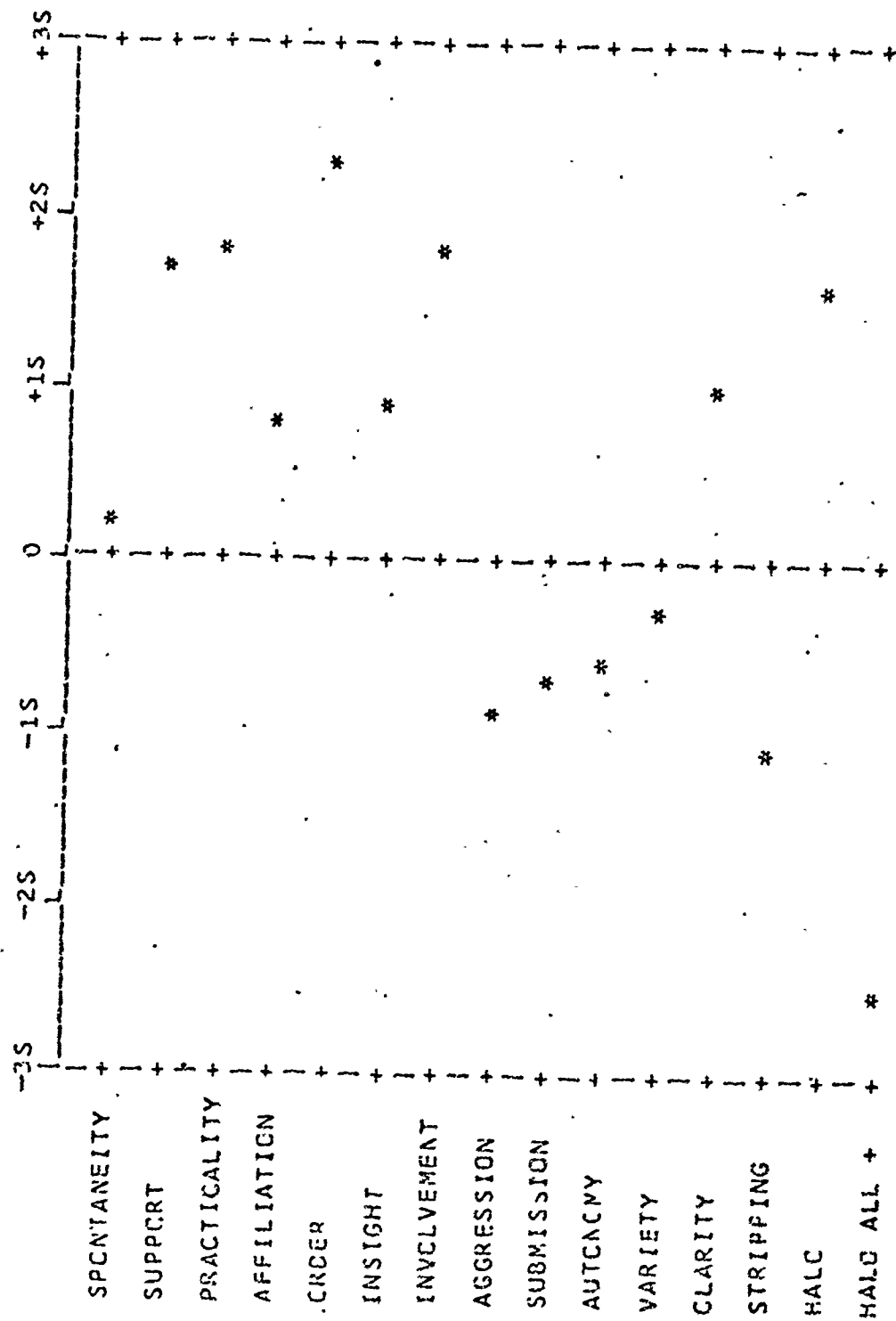
MILITARY ATMOSPHERE SCALE PROFILES (BASED ON NORMS FOR 15 COMPANIES)

CDT 434 HIGH



MILITARY ATMOSPHERE SCALE PROFILES (BASED ON NORMS FOR 15 COMPANIES)

CGT 224 LCW



Appendix 4

MCEI Items Significantly ($p < .05$)
Differentiating Between 16 Companies

Item	NP	High-low	Company (% True)											
			BCN				AIT				CST			
			high	low	high	low	high	low	high	low	high	low	high	low
			1 2 3 4 5 6 7 8	9 10 11 12 13 14 15 16										
			N = 71 95 80 93 75 64 73 63 58 100 96 69 66 73 18 84											
(Spontaneity) X														
71. It's not hard to tell how EM are feeling.	2.14 *	6	41 35 40 28 33 36 44 58 28 37 52 44 45 45 33 49											
99. EM tend to hide their feelings from the NCOs and officers.	2.31	7	77 70 85 85 67 82 71 59 48 62 65 65 72 84 53 66											
113. EM here are not encouraged to express their opinions.	3.78 *	11	25 42 21 16 35 27 39 45 24 21 34 35 24 26 39 34											
127. EM are careful of what they say when officers are around.	2.56	6	87 86 91 98 92 88 80 79 76 84 74 87 92 78 59 85											
(Support)														
15. The more effective EM help the less effective ones.	2.03	6	70 75 63 81 76 59 58 56 56 49 55 58 59 47 50 37											
29. The officers have very little time to encourage EM.	2.34	7	58 41 53 38 46 49 48 36 56 56 60 58 71 76 33 61											
44. The NCOs and officers know what the EM want.	1.97	6	51 59 67 69 64 33 64 34 47 49 65 44 44 38 39 33											
72. Officers do not take a personal interest in EM's next assignment.	2.64 *	8	41 44 41 43 55 27 45 53 31 28 42 38 19 16 39 29											
128. NCOs and officers do not go out of their way to help EM.	2.04 *	6	33 36 30 22 37 22 51 40 32 27 30 28 25 28 47 28											

X Scores are in parentheses

+ absolute score (as sometimes low > high)

* NP score originally in negative direction; scores (% True) for these would hence apply to converse of item that is presented here.

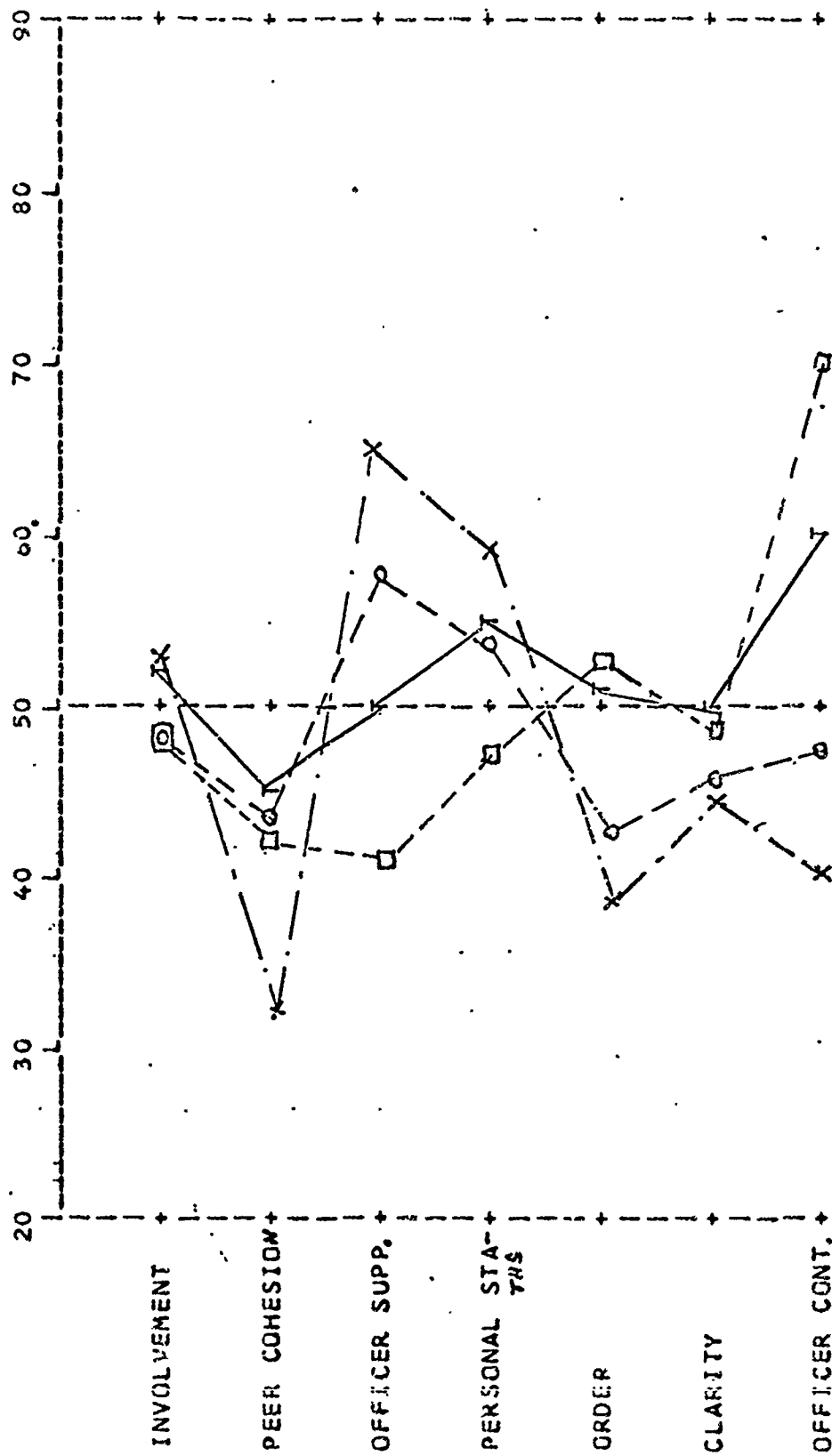
Item	NP	Ihigh-lowI	Company (% Trues)																	
			BCT			AIT			CST											
			high	low	high	low	high	low	high	low	high	low	high	low	high	low	high	low		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
			N =	71	95	80	93	75	64	73	63	58	100	96	69	66	73	18	84	
(Practicality)																				
30. EM are not more concerned with the past than with the future.	2.47 *	7	28	26	33	17	21	28	29	29	42	22	36	36	24	19	41	47		
101. EM are not encouraged to learn new ways to do things.	3.11 *	9	59	65	61	65	75	47	58	73	56	38	47	61	34	32	72	51		
115. NCOs do not care more about EM's feelings than practical problems.	2.73 *	7	17	18	20	11	25	11	31	29	29	13	20	23	11	18	22	29		
(Affiliation)																				
18. There are groups of EM who hang around together a lot.	2.14	5	90	79	86	96	78	89	81	83	90	90	89	88	86	85	72	81		
61. NCOs spend very little time talking with EM.	3.04	9	56	46	75	59	37	73	39	42	42	38	34	46	66	55	33	59		
89. There is sharing of things among the men.	5.85 *	16	10	14	19	11	22	27	41	40	22	22	29	22	31	18	44	51		
103. NCOs and officers do not help new men to get oriented to the company.	2.64 *	8	51	58	47	60	63	57	67	54	41	45	48	41	45	42	67	57		
117. It does not take a long time for EM to get to know one another here.	2.26 *	6	16	15	25	11	15	28	34	27	32	33	35	25	15	23	25	30		
131. EM here care about each other.	2.62	8	66	72	60	76	68	64	62	59	59	63	65	59	56	56	38	30		
(Order)																				
62. This is not a well organized company.	2.01 *	6	56	55	43	53	62	41	68	48	23	19	38	30	25	19	44	8		
76. Often the company area is neat.	2.82 *	8	28	27	19	7	27	6	21	23	22	23	26	22	17	20	39	59		
143. Hours of work are not irregular.	2.19 *	6	47	40	50	38	32	38	41	53	84	74	77	87	13	26	47	52	91	

Item	NP	Ihigh-lowI	Company (% Trues)									
			RCT		AIT		CST		high		low	
			high	low	high	low	high	low	high	low	high	low
			1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	9 10 11 12 13 14 15 16	9 10 11 12 13 14 15 16	58100 96 69 66 73 18 84					
			N = 71 95 80 93 75 64 73 63									
(Submission-cont)												
38. EM may not interrupt a NCO while he is speaking.	2.05*	5	10 18 9 8 14 14 15 18	17 27 25 25	9 18 22 21							
130. EM are always being reminded that they must respect their officers.	2.49	6	86 89 96 91 88 89 88 76	78 84 81 84	88 87 65 80							
(Autonomy)												
41. The NCOs and officers do not act on EM's suggestions.	2.05*	5	6 31 10 17 20 19 13 16	17 10 15 18	18 10 39 19							
126. EM are not encouraged to think and act for themselves.	2.10*	6	33 48 36 31 43 23 51 55	41 26 34 41	23 30 24 47							
(Variety)												
25. There is great emphasis on everyone dressing and acting in the same way.	2.91	7	83 77 89 93 80 92 85 86	88 92 86 87	88 74 56 54							
(Clarity)												
83. EM is not always told why his work is changed.	2.92*	8	24 34 10 15 25 16 44 37	20 18 31 25	29 24 41 22							
110. NCOs do not tell EM when they do a good job.	3.38*	10	51 70 43 48 74 47 63 65	48 54 62 61	50 55 83 43							
125. NCOs don't explain enough about how and why something has to be done.	4.72	14	63 56 78 70 49 61 49 60	75 85 68 68	65 70 29 65							
(Stripping)												
124. A man's background is considered in what others think of him.	2.03*	6	59 58 64 66 67 69 59 80	64 67 71 67	54 60 77 50							

Appendix 6

Longitudinal Company Profiles in Standard Scores

Co. 1 Longitudinal Changes of MCEI Factor Scales (Standard Scores)



KEY:

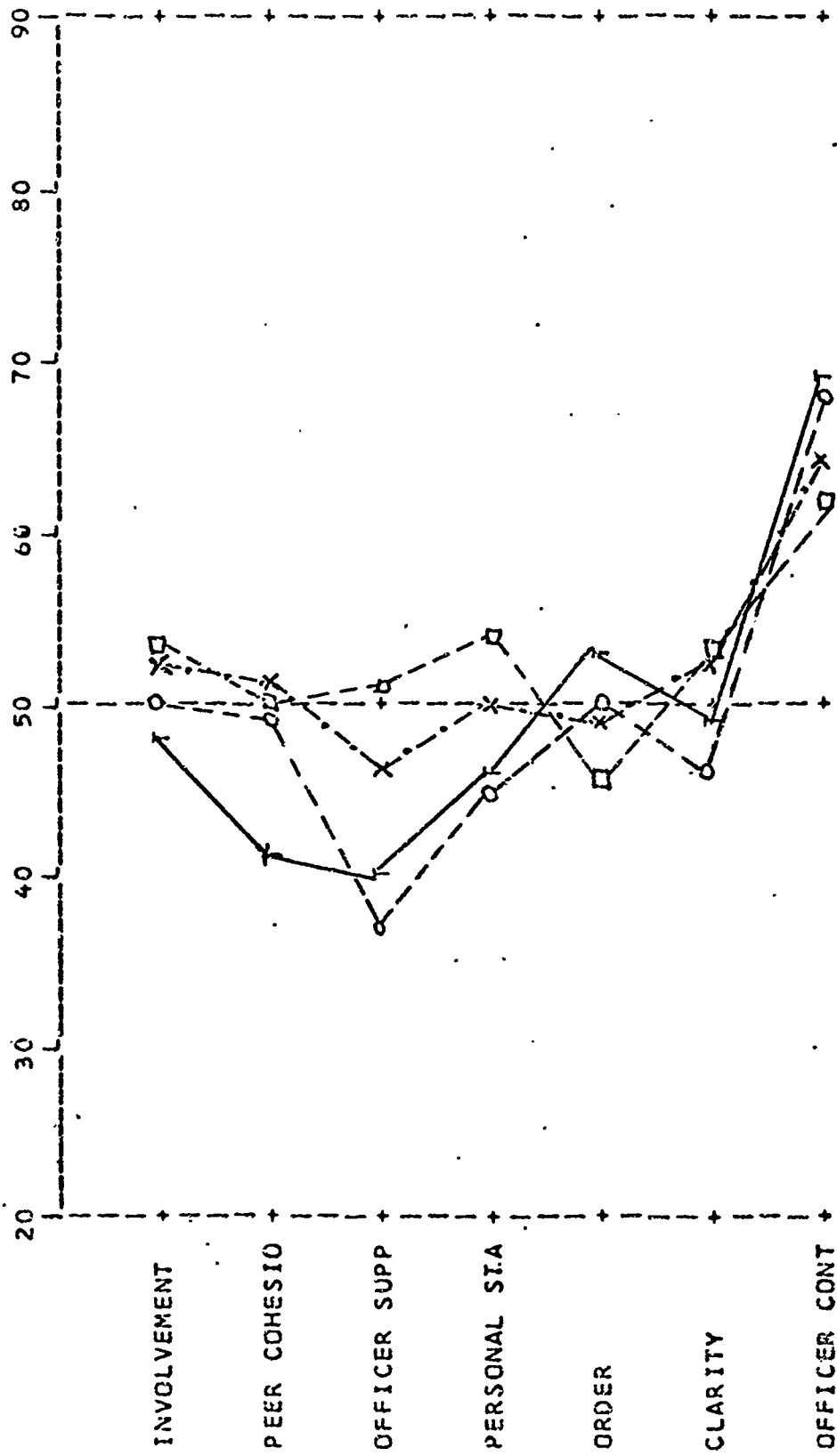
2nd Week = T-T-T

4th Week = O-O-O

6th Week = X-X-X

8th Week = □-□-□

Co.2 Longitudinal Changes of MCEI Factor Scales (Standard Scores)



KEY:

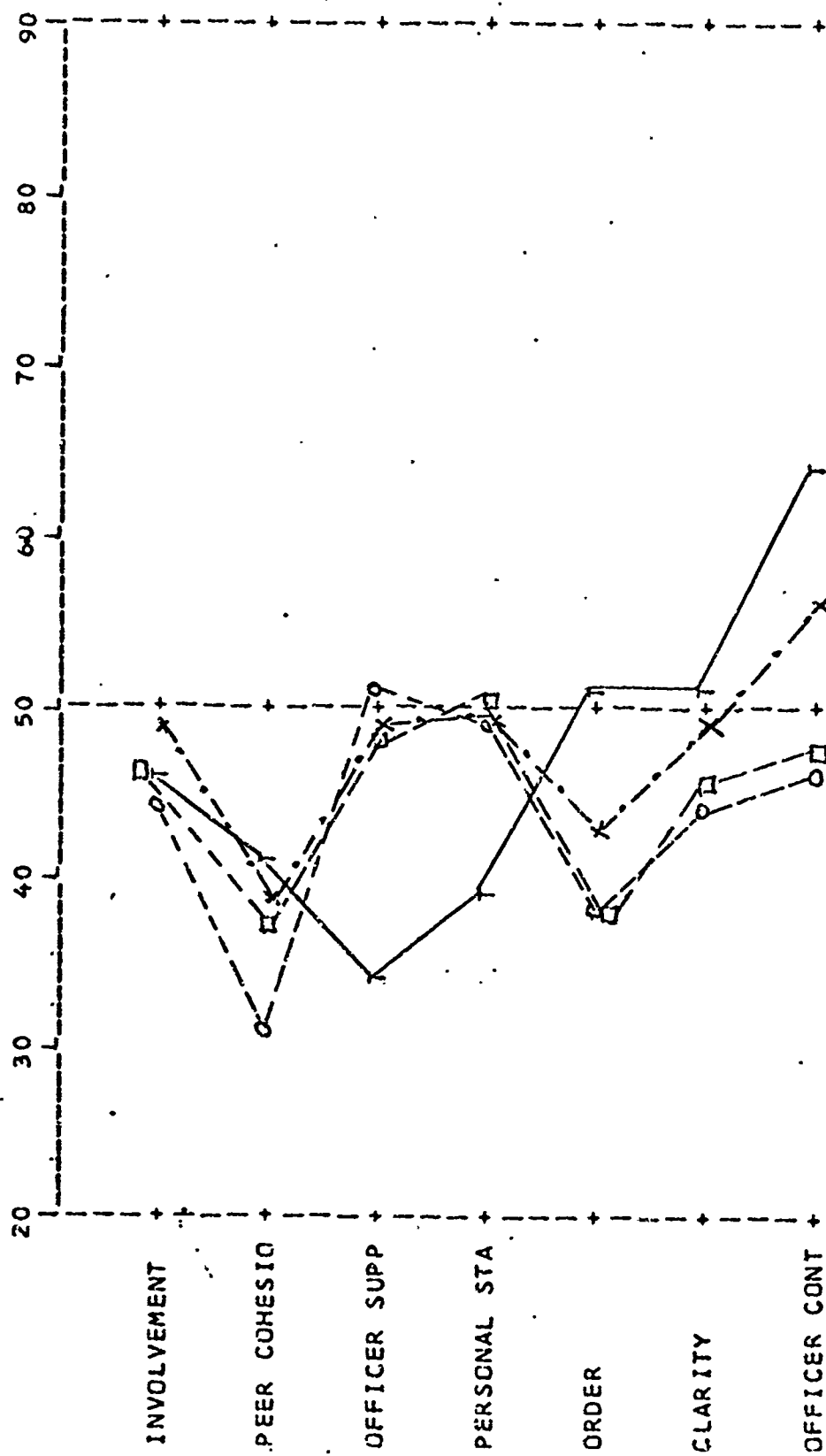
2nd Week = T—T—T

4th Week = O—O—O

6th Week = X·X·X

8th Week = □—□—□

Co. 3 Longitudinal Changes of MCEI Factor Scales (Standard Scores)



KEY:

2nd Week = T-T-T

4th Week = O-O-O-O

6th Week = X-X-X-X

8th Week = □-□-□-□

Appendix 5

MCEI Factor Scales
(Direction of Scoring Indicated
After Item Number)

MES - Trial #3 Scoring KeyInvolvement

- 9t. EM put a lot of energy into what they do around here.
- 11t. A lot of interesting things go on in this company.
- 22f. A lot of EM just seem to be "putting in their time" without really working.
- 28t. The EM perform details without being prodded.
- 37t. EM are proud of this company.
- 51f. Men in this unit seem bored most of the time.
- 53f. The work here is repetitious and boring.
- 65t. Discussions in the barracks or company area are pretty interesting.
- 80f. Nobody ever volunteers around here.
- 95t. Activities on some days are quite different than on others.
- 107f. EM don't do anything around here unless they are ordered to.
- 121t. EM here really try to improve and learn.

MES - Trial #3 Scoring Key

Peer Cohesion

- 4f. It's hard to get a group of EM together for card games or other off-duty activities.
- 7f. EM don't much talk about their past.
- 14f. EM tend to hide their feelings from one another.
- 15t. The more effective EM help the less effective ones.
- 20t. EM tell each other about their personal problems.
- 71f. In this company, it's hard to tell how EM are feeling.
- 75t. EM often do things together during off-duty hours.
- 89f. There is very little sharing of things among the men.
- 91f. EM rarely talk about their personal problems with each other.
- 117f. It takes a long time for EM to get to know one another in this company.
- 119f. It's not safe for EM to discuss their personal problems around here.
- 131t. EM around here care about each other.

MES - Trial #3 Scoring KeyOfficer Support

- 29f. The officers have very little time to encourage EM.
- 39t. The NCOs and officers try new ways of running this company.
- 41t. The NCOs and officers act on EM's suggestions.
- 44t. The NCOs and officers know what the EM want.
- 57t. In this company, EM can talk freely with their NCOs.
- 61f. NCOs spend very little time talking with EM.
- 67f. EM often criticize or joke about their NCOs or officers.
- 100t. Each EM is treated differently in this company, depending upon his problem.
- 110t. NCOs tell EM when they do a good job.
- 116t. EM are rarely kept waiting when they ask to see their NCOs and officers.
- 128t. NCOs and officers go out of their way to help EM.
- 133t. NCOs encourage EM to talk about their work problems.

MES - Trial #3 Scoring Key

Personal Status

- 27f. The EM have almost no say in the running of their barracks.
- ~~33f.~~ You are treated like a child here.
- 42t. A person's differences are respected in this company.
- 55t. Being in this company helps a man to live up to his potential.
- 56f. Very few EM have any responsibility in the company.
- ~~78f.~~ Being in this company makes you lose your self-respect.
- 97t. Men feel more capable now than when they first entered the company.
- 98t. EM are expected to take leadership in the company.
- 101t. EM are encouraged to learn new ways to do things.
- ~~112f.~~ It is not possible to be an individual here.
- 126t. EM are encouraged to think and act for themselves.
- 144t. EM individual talents are recognized.

MES - Trial #3 Scoring Key

Order

- 17t. This company is very strict about EM following the daily schedule.
- 34t. EM activities are carefully planned.
- 40f. Things are sometimes very disorganized around here.
- 48f. The EM's barracks are not as neat as they should be.
- 62t. This is a very well organized company.
- 68f. There is frequent turnover of NCOs and officers in this unit.
- 70t. The company is strict about EM leaving the company area without saying where they're going.
- 86f. Officers sometimes don't show up when they're supposed to.
- 93t. EM are pretty busy all of the time.
- 104f. The Day Room is often messy.
- 118t. The NCOs and officers set the example for neatness and orderliness.
- 143f. Hours of work are very irregular.

MES - Trial #3 Scoring Key

Clarity

- 12f. EM never know when an officer will ask to see them.
- 16t. It is clear how the skills being learned will help EM to be good soldiers.
- 26t. EM know when the commander will be inspecting the company.
- 46f. Sometimes EM are uncertain as to who is really running the company.
- 52f. NCOs and officers argue on how to run the company.
- 54t. If an EM breaks a rule, he clearly knows what will happen to him.
- 69f. People are always changing their minds here.
- 73t. EM are told how their work or training will help them in the future.
- 96f. EM never know when they will be transferred (from this company).
- 122f. NCOs sometimes argue among themselves.
- 123f. Company rules and policies are constantly changing.
- 139t. Regulations in the company are clearly understood by the EM.

MES - Trail #3 Scoring Key

Officer Control

- 3f. The NCOs are not harsh when they give orders.
 - 5f. The company gives passes easily.
 - 31f. The company commander very seldom gives article 15's.
 - 74t. EM who break minor company regulations are punished for it.
 - 99t. EM tend to hide their feelings from the NCOs and officers.
 - 102t. Obeying rules in this company seems to be more important than getting the work done.
 - 111t. NCOs are constantly checking on the men and supervise them very closely.
 - 136t. Fighting among EM almost always result in punishment.
 - 138t. Men are ridiculed in front of others.
 - 140t. NCOs and officers discourage criticism.
 - 141t. NCOs get chewed out in front of their men.
 - 146t. Officers and NCOs expect too much of the men.
- f. ...*

Appendix 7

Rank Order Correlation of Company Percentage
of "True" Response with Performance Criteria

MC EI (R)

PERFORMANCE vs % TRUE item R's

INVOLVEMENT					ACROSS & CROSS-SECTIONAL				
ITEM #	AVG ARTS	SICK LEAVE	TEST SCORES	TOTAL	COMPANIES				
9	-.10	-.00	.05	-.02					
11	-.07	-.23	-.11	-.14					
22	-.21	-.02	.07	-.02					
28	.17	.05	-.02	.18					
37	.31	.21	.24	.45					
51	.02	.19	.23	.28					
53	.33	.69	-.02	.18					
65	.43	.05	.29	.36					
80	-.05	.24	-.12	-.12					
95	.07	.14	.10	.11					
107	-.21	.19	.21	.14					
121	-.00	.31	.50	.36					
PEER COHESION									
4	-.11	-.00	-.38	-.36					
7	.43	-.24	-.19	-.07					
14	-.19	-.05	.21	.15					
15	.79	.43	.33	.68					
20	.52	.27	.15	.24					
49	.21	-.00	.21	.57					
71	-.52	-.16	-.52	-.30					
75	.17	-.15	.42	.32					
87	-.14	-.11	.19	-.07					
117	-.26	-.23	-.69	-.62					
119	-.72	-.49	-.30	-.72					
131	.64	-.02	.40	.43					
OFFICER SUPPORT									
29	.07	-.19	-.33	-.29					
39	.33	.21	.07	.40					
41	-.29	-.24	.43	-.00					
44	-.02	.24	.67	.40					
57	.05	-.12	.31	.26					
61	.24	.29	-.22	-.10					
67	-.16	.22	-.33	-.25					
103	-.26	-.67	.10	-.33					
110	.05	-.10	-.33	-.17					
116	.19	.26	.45	.48					
128	-.19	-.50	.50	-.02					
133	.43	-.10	.14	.29					

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MCET (B)

PERFORMANCE AS % TRUE ITEM R²

PERSONAL STAIRS

ITEM #	AVG L NET FS	SIR LEAVE	TEST SCORE	TOTAL
37	.02	-.05	-.18	-.33
38	-.00	.24	.57	.43
42	.40	-.05	-.10	.19
55	.12	.29	.24	.33
56	.38	.43	.19	.52
85	.05	-.57	-.10	-.24
97	.33	.21	.06	.26
98	-.19	-.71	.05	-.33
100	.10	-.40	.26	.03
101	-.36	-.54	.33	-.50
126	-.40	-.40	-.36	-.55
144	.17	-.10	-.29	-.05

ORDER

17	.55	.69	-.21	.43
24	-.05	.33	.10	.24
40	.25	-.43	.10	-.17
48	-.31	.00	-.14	-.10
53	-.29	.22	-.21	-.11
65	.10	-.60	.25	-.05
70	.13	.57	.19	.32
86	.17	.27	-.52	-.12
93	.02	.52	-.49	-.05
104	-.15	-.67	.42	-.22
118	.60	.52	.38	.67
143	-.19	-.38	-.24	-.50

10/5/71

MCEI (R)

PERFORMANCE vs. % TRUE ITEM R¹³

CLARITY

ITEM #	ANOL ART 15	SICK LEAVE	TEST SCORES	TOTAL
12	.36	.67	-.29	.31
16	.50	.38	.38	.64
26	-.10	.62	.29	.33
46	.33	-.07	-.60	-.17
52	-.14	-.12	-.40	-.43
54	-.10	.36	-.02	.12
69	.05	-.31	.12	-.02
73	.10	-.21	-.40	-.19
96	-.19	.17	-.50	-.33
122	-.64	-.52	-.16	-.73
133	.14	.10	.14	.21
139	.10	.09	.33	.38

OFFICER CONTROL

3	.45	.21	.26	.52
5	-.61	-.25	.15	-.26
31	-.14	.14	.48	.36
71	-.02	.09	-.52	-.24
99	-.26	.17	.26	-.00
102	-.14	.40	-.12	-.00
111	.55	.21	-.10	.48
136	-.19	-.05	.05	-.12
138	-.12	.50	.02	.10
140	-.55	.10	-.14	-.33
141	-.48	-.55	-.12	-.55
146	-.24	-.07	-.41	-.45

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13. ABSTRACT			
<p>The purpose of this two-year study was to develop and test a method for assessing the social climate of military training companies and determine the relationship between enlistment men's perceptions of their company environments, feelings of stress, and performance.</p> <p>A total of 32 training companies at Fort Ord, California was given the Military Company Environment Index (MCEI) over a two-year period. This index assessed subjects' perception of their company environment on 13 scales given such labels as Spontaneity, Support, Practicality, Affiliation, Order, etc. In addition, subjects took the Multiple Affect Adjective Check List which measures subjects' feelings of Anxiety, Depression, Hostility and Dysphoria. Performance was measured in terms of number of sick calls, AWOL, Article 15, PCPT scores, Firing scores, and Graded Test scores.</p> <p>Results showed that a final factor analyzed version of the MCEI could be developed whose scales were significantly related to feelings of stress and also to military performance. The most important aspect of the environment associated with stress and performance was peer support.</p> <p>Results also showed that BCT units' environments change in highly unique ways.</p> <p>The major military implication is that the MCEI can assist command to assess company environments and develop procedure to increase company effectiveness.</p>			

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1 NOV 65

REPLACES DD FORM 1473, 1 JAN 64, WHICH IS
OBSOLETE FOR ARMY USE.

Security Classification

14.

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stress

performance

military environments

LINK A

LINK B

LINK C

ROLE

WT

ROLE

WT

ROLE

WT